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ABSTRACT

Summarized in this report are the discussions which took place during the twelfth session of the Intergovernmental Oceanographic Commission (IOC) Assembly. Summaries are provided in 15 sections: opening comments; administrative arrangements; adoption of triennial commission report; ocean sciences; ocean services; training, education, and mutual assistance in the marine sciences; implications for the IOC of developments in international affairs; mid-term plan, program, and budget; structure and function of commission and its regional subsidiary bodies; agreements with other organizations of the United Nations system and other bodies; Brunn memorial lectures; elections; dates of future conferences; adoption of the report; and closing statement. Eight appendixes are also included, providing: the conference agenda; the 22 adopted resolutions; conference addresses; lists of IOC member states, commission officers, and state-member representatives on executive council; guidelines for the structure and responsibilities of IOC subcommissions; abstracts of 1982 Anton Brunn memorial lectures (focusing on ocean science for the year 2000); a list of participants; and a list of acronyms/abbreviations. (JN)

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Intergovernmental Oceanographic Commission

Summary Report

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Twelfth session of the Assembly

Paris, 3 - 19 November 1982

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Unesco

THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

was established within Unesco in November 1960

The functions of the Commission are to:

(a) define those problems the solution of which requires international co-operation in the field of scientific investigation of the oceans and review the results of such investigation;

(b) develop, recommend and co-ordinate international programmes for scientific investigation of the oceans and related services which call for concerted action by its members;

(c) develop, recommend and co-ordinate with interested international organizations, international programmes for scientific investigation of the oceans and related services which call for concerted action with interested organizations;

(d) make recommendations to international organizations concerning activities of such organizations which relate to the Commission's programme;

(e) promote and make recommendations for the exchange of oceanographic data and the publication and dissemination of results of scientific investigation of the oceans;

(f) make recommendations to strengthen education and training programmes in marine science and its technology;

(g) develop and make recommendations for assistance programmes in marine science and its technology;

(h) make recommendations and provide technical guidance as to the formulation and execution of the marine science programmes of the United Nations Educational, Scientific and Cultural Organization;

(i) promote freedom of scientific investigation of the oceans for the benefits of all mankind, taking into account all interests and rights of coastal countries concerning scientific research in the zones under their jurisdiction.

In carrying out its functions, the Commission is required to bear in mind the special needs and interests of developing countries including in particular the need to further the capabilities of these countries in marine science and technology.

Nothing in the above shall be construed as implying the expression of a position regarding the nature or extent of the jurisdiction of coastal States in general or of any coastal State in particular.

(Statutes, Article 2, November 1970)

In addition to the above, the Commission has a further function which is to act as an effective joint specialized mechanism operating on behalf of certain organizations of the United Nations system substantially concerned with oceanic programmes (United Nations, Unesco, FAO, WMO and IMO), under an agreement developed by the Inter-secretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO).

SC/MD/73
PARIS, June 1983
Original english

PREAMBLE

'The purpose of the Commission is to promote scientific investigation with a view to learning more about the nature and resources of the oceans through the concerted action of its members.' (Statutes, Article 1, paragraph 2);

The Commission held the twelfth session of its Assembly in Unesco Headquarters in November 1982. Delegates from 93 Member States and representatives from 18 intergovernmental and non-governmental bodies attended.

This Summary Report contains a summary of the discussions which took place during the session in ad hoc Sessional Technical Committees and in Plenary. The 22 resolutions adopted are given in full in Annex II. This report does not contain the resolutions of the Executive Councils held between the eleventh and twelfth sessions of the Assembly, following the usual practice hitherto, since many Council decisions are now embodied in the text of its summary reports rather than in resolutions.

During the session, the traditional Bruun Memorial Lectures were presented; this year the theme was 'Ocean Science for the Year 2000'. Abstracts are given in Annex VI. The full lectures will be published in the IOC Technical Series.

With a few exceptions, the *decisions* and *actions* internal to the Commission have been incorporated into the body of the summary report; the relevant paragraphs have been marked by the symbol:

D for *decisions* on policy, and

▲ for calls for *action* (e.g. by the Member States, the governing and subsidiary bodies, the Secretary, etc.) required to give effect to policy. Obviously, the distinction is not always clear-cut.

Expressions of general approval or of appreciation are not marked, except that all the positions taken by the Assembly are indicated by underlining in the text of the Report.

During the period covered by this report, i.e. from the end of the eleventh session of the Assembly (3 November 1979) until the end of the twelfth session of the Assembly (19 November 1982) including the thirteenth, fourteenth, fifteenth and sixteenth sessions of the Executive Council:

(a) the following served as Officers of the Commission:

Chairman: Dr A. Ayala-Castañares (Mexico)

First Vice-Chairman: Dr N.J. Campbell (Canada)

Second Vice-Chairman: Dr C. Druet (Poland)

Third Vice-Chairman: Professor Inocencio A. Ronquillo (Philippines)

Fourth Vice-Chairman: Dr A.R. Bayoumi (Egypt)

(b) the following served as State-Member Representatives on the Executive Council:

F. Vila	Argentina
V. Lisieux Medeiros de Figueiredo	Brazil
Luo Yuru	China
J. Sanchez Cortés	Colombia
M.-A. Martin-Sané	France
H.U. Roll	Germany, Federal Republic of
V.V.R. Varadachari	India
N. Nasu	Japan
S.O. Allela	Kenya
T.F. Groustra-de Kat	Netherlands
E.O. Bayagbona	Nigeria
Sogui Diouf	Senegal
M. Oliver Massuti	Spain
J.-O. Strömberg	Sweden
Salem Hadj Ali	Tunisia
E.I. Tolstikov	Union of Soviet Socialist Republics
R.J.H. Beverton	United Kingdom
J.V. Byrne	United States of America
J.A. Galavis Seidel	Venezuela
Rade Stijelja	Yugoslavia

A list of the new Officers of the Commission and State-Member Representatives on the Executive Council who will serve until the end of the thirteenth session of the Assembly (February 1985) is given in Annex IV to this Report.

TABLE OF CONTENTS

		Page
Summary report		7
1.	Opening	7
2.	Administrative arrangements	7
3.	Adoption of the triennial report of the Commission	9
4.	Ocean sciences	10
5.	Ocean services	23
6.	Training, Education and Mutual Assistance in the Marine Sciences (IEMA)	30
7.	Implications for the IOC of developments in international affairs	37
8.	Medium-Term Plan, Programme and Budget	42
9.	Structure and functioning of the Commission and its regional subsidiary bodies	46
10.	Agreements with other organizations of the United Nations System and other bodies	56
11.	Bruun Memorial Lectures	62
12.	Elections	63
13.	Dates and places of the thirteenth session of the Assembly and of the seventeenth and eighteenth sessions of the Executive Council	66
14.	Adoption of the summary report	67
15.	Closure	67

Annex I Agenda

Annex II Adopted resolutions

Annex III Addresses:

A. Address by Mr Amadou-Mahtar M'Bow, Director-General of Unesco (12 November 1982)

B. Address by Mr Louis le Pensec, French Minister for the Sea (10 November 1982)

C. Inaugural Address by Dr Abdul-Razzak Kaddoura, Assistant Director-General for Science of Unesco (3 November 1982)

D. Address by Dr Agustín Ayala-Castañares, Chairman of IOC, in reply to the Address by the Director-General of Unesco (12 November 1982)

E. Statement by Professor Roger Revelle on Oceanography in the World Climate Research Programme (5 November 1982)

Annex IV — A. List of IOC Member States (as at 15 November 1982).

B. Officers of the Commission (as at 20 November 1982)

C. State-Member Representatives on the Executive Council (as at 20 November 1982)

Annex V — Guidelines for the structure and responsibilities of IOC subcommissions

Annex VI — Anton Bruun Memorial Lectures 1982 (Abstracts)--Ocean Science for the Year 2000

Annex VII — List of participants

Annex VIII — List of acronyms and abbreviations

1. OPENING

The Chairman, Dr Agustín Ayala-Castañares, called the Assembly to order at 11 a.m. on 3 November 1982, in the presence of Mr Michel Batisse, Deputy Assistant Director-General for Science, representing the Director-General of Unesco. He informed the Assembly that the Assistant Director-General for Science of Unesco, Professor Abdul-Razzak Kaddoura, would address the Assembly at 2.30 p.m. on the same day. The French Minister of the Sea, Mr Louis le Pensec, would address the Assembly at 2.30 p.m. on 10 November 1982. The addresses of the principal speakers, as well as the introductory statement of the chairman are given in Annex III. 1

The Chairman set the scene for the work of the Assembly. He stressed its great importance, particularly in view of the fact that it was being held just when the Convention of the Law of the Sea had been adopted and would be open for signature in a few weeks. This would consolidate the basis of a new ocean regime and be a corner-stone of a new international economic order, and had considerable implications for the role of the Commission and for Unesco as a whole, vis-à-vis Member States, and within the United Nations system. This, he observed, had been already clearly recognized by the Director-General in raising the rank of the Secretary from D-1 to D-2, as requested by the Assembly in resolution X-26. This change in the Secretary's status carried with a broadening of the Secretary's responsibilities for the planning and co-ordination of the Unesco programme in the field of marine affairs. The Assembly was therefore called upon to take important steps in the promotion of marine science, the co-ordination of research programmes, the provision of more and improved ocean services, the building-up of marine scientific capabilities of the Member States, the facilitation of dialogue amongst Member States and amongst the organizations members of ICSPRO. 2

A list of participants is given in Annex VII. 3

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA

After some discussion of the order in which certain items might best be taken, and of the connection between certain items, the Assembly adopted the provisional agenda proposed by the Secretary. The adopted agenda is attached as Annex I. 4

2.2 DESIGNATION OF THE RAPPORTEUR

The Chairman informed the Assembly of the discussion in the Steering Committee (2 November 1982), which recommended Dr R.G. Padgham (United Kingdom) as the General Rapporteur for the Assembly. 5

The Assembly welcomed this proposal and so designated Dr Padgham. 6

2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

The Secretary briefly reviewed the documentation for the session. He informed the Assembly of unavoidable changes in the timetable, particularly in view of the arrangements for the addresses of the Director-General and the French Minister of the Sea, mentioned by the Chairman under agenda item 1. 7

8 The Chairman informed the Assembly of the Steering Committee's recommendation to form five ad hoc Sessional Technical Committees and a Resolutions Committee; he also informed the Assembly of the composition of the Nominations Committee formed by the Steering Committee at its session on 2 November 1982, in accordance with Rule of Procedure No. 12(2): Argentina, China, Federal Republic of Germany (Chairman), Iraq, Japan, Kenya, United States of America and the USSR. The name of Turkey was added at the Assembly. The Chairman proposed working hours.

9 The Delegate of the United Kingdom called the attention of the Assembly to the proposal in document IOC-XII/8 Annex 19 on increasing the membership of the Executive Council. He pointed out that if a favourable decision on this proposal was delayed it would not come into effect for the elections at the present session of the Assembly, since it required a change in the existing Rule of Procedure No. 18(1).

10 The Assembly adopted this proposal; it is reported under agenda item 12.

2.4 CONSTITUTION OF SESSIONAL COMMITTEES

11 The ad hoc Sessional Technical Committees proposed by the Steering Committee, and the agenda items they should deal with, were:

Committee	Title	Assembly agenda items
I	Ocean Sciences	4
II	Ocean Services	5
III	Training, Education and Mutual Assistance in the Marine Sciences	6
IV	Medium-Term Plan, Programme and Budget	8
V	Structure and Functioning of the Commission and International Co-operation	7, 9

12 The proposed Chairmen, Rapporteurs and Technical Secretaries were:

Committee	Chairman	Rapporteur	Technical Secretary
I	Dr C. Druet (Second Vice-Chairman)	Dr V. Varadachari (India)	F. Robles N. Andersen B. Thompson
II	Professor A.R. Bayoumi (Fourth Vice-Chairman)	Dr K. Voigt (G.D.R.)	Y. Oliounine
III	Professor I. Ronquillo (Third Vice-Chairman)	Dr M. Murillo (Costa Rica)	S.M. Haq
IV	Dr N.J. Campbell (First Vice-Chairman)	Dr G. Giermann (F.R.G.)	N. Philippon-Tulloch
V	Mlle M.-A. Martin-Sané (France)	Mr D. Bradford (Canada)	R.C. Griffiths

13 The Assembly accepted these proposals.

The Chairman proposed the following Member States for the Resolutions Committee, following the suggestion made to him by the Steering Committee: China, Brazil (Chairman), France, India, Japan, Spain, Tunisia, United Kingdom, United States of America and the USSR. 14

The Assembly approved this proposal. 15

Regarding the preparation of the Summary Report of the Assembly, the Secretary proposed that the Draft Reports of the five ad hoc Sessional Committees be adopted by the respective committees and then submitted to the Plenary where they should be approved as amended and then adopted as the respective parts of the Draft Summary Report of the Assembly, subject only to any modifications that might prove necessary upon consideration of this Draft Summary Report as a whole under agenda item 14. 16

The Assembly accepted this proposal. 17

3. ADOPTION OF THE TRIENNIAL REPORT OF THE COMMISSION

The Secretary introduced this item. He outlined the Draft Triennial Report (document IOC-XII/6), explaining that, under Article 12 of its Statutes, the Commission is required to provide regular reports on its activities to the Unesco General Conference. He noted that the basic purpose of the Report is to give an overview of the activities of the Commission to facilitate debate on the IOC Programme and Budget by national delegations to the General Conference of Unesco. 18

Several delegates expressed their general approval of the Report although they voiced some concern as to their ability to provide detailed comment in view of the fact that the Draft Triennial Report had been issued at a late date and was not available in all languages. 19

In this context, some delegates requested that the Commission again consider the possibility of issuing certain key documents in the Arabic language. 20

Several delegates also pointed out the important public-information function of this Report which is directed to a non-specialist audience, and suggested that it be given a suitable format with this purpose in mind, as a means of making the aims, functions and achievements of the Commission more widely known. 21

The Assembly agreed that the Report could be further improved by: 22

- ensuring that a more balanced emphasis was given to the various IOC programmes, especially TEMA, and that the interrelationship of the many IOC activities was made clear;

- indicating the Commission's priority areas and the reasoning behind their selection;

- including a general introductory section specifically aimed at the Unesco General Conference;

- clearly indicating the broader issues to which the IOC's programmes relate, such as natural disasters, economic development and conservation;

- updating the text to take account of decisions of the Assembly and to give indications of the future direction of IOC in terms of the study of major marine scientific problems, such as those covered in 'Ocean Science for the Year 2000';

- including graphic and bibliographic material;

- expanding references to activities of other bodies in the work of which IOC is playing, or could play, an important role, such as marine pollution research in relation to environmental protection in the context of, for example, the Oslo, London and Paris Conventions, coastal studies, a field in which IOC is increasing its activities, in close collaboration with the Division of Marine Sciences and co-operative programmes with other bodies, including the United Nations organizations Members of ICSPRO, and the United Nations Environment Programme.

23 The Assembly expressed its general satisfaction with the Draft Triennial Report and requested that the comments of Member States be taken into account when the final version is prepared. It called on Member States to send to the Secretary written suggestions for improvements, preferably by the end of the year and no later than 15 January 1983; it also called on the Officers of the Commission to assume the responsibility of finally reviewing the text to be submitted to the twenty-second session of the Unesco General Conference.

4. OCEAN SCIENCES

24 The Second Vice-Chairman of IOC, Professor C. Druet, introduced this item. He briefly outlined the subjects to be taken.

4.1 OCEAN SCIENCE FOR THE YEAR 2000

25 The President of SCOR, Professor E.S.W. Simpson, introduced this item. He reviewed the preparation of the report on 'Ocean Sciences for the Year 2000' (document IOC/INF-505). The draft science chapters had been reviewed by a SCOR/IOC/Unesco Expert Consultation on Future Ocean Research (held in Villefranche-sur-Mer from 13 to 17 April 1982) and the draft report on 'Ocean Science for the Year 2000' had been finalized in the light of these discussions. The experts at Villefranche decided that they should deal with applications and, consequently, document IOC/INF-505 Add. had also been prepared. The science chapters had also been presented to a round-table during the Joint Oceanographic Assembly (Halifax, Nova Scotia, August 1982). Comments made on that occasion, as well as any others subsequently submitted to SCOR in writing, will be considered when preparing the printed version of the report. Professor Simpson requested that any further comments to be received by the SCOR Secretariat be sent no later than 31 December 1982. One of the objectives of this exercise was to assist the Commission in defining its future scientific programme, along with similar proposals, such as those on Ocean Science in Relation to Living Resources and Ocean Science in Relation to Non-Living Resources.

26 The Secretary of IOC informed the Assembly that it was not requested to approve the report on 'Ocean Science for the Year 2000', but rather to use it as a basis for discussion of other relevant items of the agenda and for the updating of LEPOR (agenda item 7.3). He drew the Assembly's attention to the fact that the Anton Bruun Memorial Lectures covered the four major areas of future ocean research addressed in this report: the ocean floor and what lies beneath it; biological oceanography; ocean chemistry; and physical oceanography and climate.

Some delegates felt the need for a more thorough and balanced coverage of topics such as small-scale air-sea interactions, the effect of sound and light on the behaviour of animal life, mariculture and fisheries, and the marine environment. The report should also emphasize the importance of international co-operation in the development of marine sciences and, in this context, of the need for assistance to the developing countries. Some delegates queried the applicability of the report to marine science in the developing countries. 27

The Assembly expressed its appreciation of the work done by SCOR, and its satisfaction with the scientific content of documents IOC/INF-505 and 505 Add., but noted that certain subject areas might have been given greater attention, and that the views expressed in specific sections did not necessarily represent all facets of opinion of the marine scientific community. 28

It commended the scientists who had participated in its preparation, especially Professor E. Seibold, Chairman of the above-mentioned Expert Consultation, and Professor W. Wooster, General Rapporteur, for the high quality of the draft report. 29

The Assembly believed that discussions similar to those undertaken during the Joint Oceanographic Assembly should be encouraged at the national level. 30

The Assembly recommended that proper consideration be given to the fact that new developments in marine science come not only as a consequence of developments in instrumentation and technology, but also of developments in basic sciences and scientific theory and their application to marine scientific problems. 31

4.2 OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR)

The IOC Assistant Secretary, Dr I. Robles, introduced this item. He recalled the mandate given to the Secretary through resolution XI-17 and the activities undertaken in the implementation of the resolution. 32

Dr Richard Barber, Chairman of the SCOR/ACMRR Working Group No. 67, introduced document IOC-XII/8 Annex Ia, proposing a study of certain groups of fish and shellfish species that are widespread over the globe but in somewhat different sets of environmental conditions. This approach would permit the effects of these different sets of conditions to be compared, and, therefore, the SCOR/ACMRR Working Group No. 67 recommended specifically the conduct of an International Recruitment Experiment (IREX). The OSLR programme is expected, however, to encompass a wider range of subjects than just IREX. 33

The representative of FAO pointed out that his Organization had supported the work of SCOR/ACMRR Working Group No. 67 through ACMRR and said that, for a final decision on the co-operation of FAO in the OSLR programme, the discussion on this item would be carefully taken into consideration. He stressed the importance of laboratory studies with respect to IREX. 34

The Assembly felt that the Working Group No. 67 had made a sound decision to focus on the recruitment problem and pointed out that the time seems to be ripe to put efforts together using the experience gained by the Commission in its regional co-operative investigations. 35

36 Some delegates stressed the urgency of solving the problems addressed by the GCLR programme, whereas others pointed out the difficulties in implementation, which should not be underestimated.

37 The Assembly stressed the importance of the TEMA component in the GCLR programme. In view of the various activities of other international bodies in this field, it took the view that relevant scientific linkages should be established with other relevant bodies and that, from the beginning, careful management of data sets should be given high priority.

38 Some delegates, while welcoming the programme, expressed the view that, because of its complexity, fast progress could not be expected, and suggested that attention should first be paid to regions for which observations are already available through international co-operative investigations carried out over several years or decades.

39 The Assembly noted the ICES experience during the last 80 years. It felt that long-term studies in selected regions would be the most logical approach. However, it believed that studies on larger numbers of similar stocks in various regions could shorten the time-series needed and would have the advantage of involving more institutions in developing countries.

40 Nevertheless, the Delegate of Norway, supported by some other delegates, did not think that increasing the number of similar stocks studied would necessarily shorten the time-series required.

41 The Assembly supported the idea, also proposed by the SCOR-ACMRR Working Group No. 67, of designing appropriate experiments for high-diversity ecosystems.

42 The Assembly decided that a workshop should be organized by IOC and the Division of Marine Sciences of Unesco, with the collaboration of FAO, IABO and SCOR, in 1983, to examine the special problems of high-diversity ecosystems in the context of the GCLR programme.

43 The Assembly noted that there was a consensus that the GCLR programme should be initiated on the basis of the proposals in document IOC-XII/3 Annex IV which indicates the first steps to be taken. It stressed the fact that GCLR has to be considered as a long-term project that has to go through various stages.

44 The Assembly strongly expressed the hope that FAO will decide to co-sponsor the GCLR programme.

45 The Assembly adopted resolution XII-1.

46 The machinery for the implementation of this programme, and the offer by Canada to host a workshop on IREX, are discussed under agenda item 9.1.2.

4.3 OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR)

47 The President of SCOR, Professor J.D.W. Simpson, introduced this item. He said he had chaired an ad hoc Working Group on Non-Living Marine Resources during the Third International Workshop on Marine Geosciences, held at Heidelberg, Federal Republic of Germany, in July 1982. Owing to time constraints, the proposal for an IOC programme on Ocean Sciences in relation to Non-Living Resources (OSNLR) circulated as document IOC-XII/3 Annex IX did

based on the Heidelberg report, needs some rewriting which Professor E.S.W. Simpson offered to do but not before February 1983. He thanked Dr Harold Bäcker of the Preussag Company, Federal Republic of Germany, for his valuable help in preparing the proposal. The report on the Third International Workshop on Marine Geoscience was made available to participants at the Assembly.

The President of SCOR mentioned the various mineral deposits being worked at present and the possibilities for the next decade or two with respect to deposits such as polymetallic nodules, phosphorites, metalliferous muds and the sulphides near the hydrothermal vents. He cautioned, however, against over-emphasis of the benefits of exploitation of some of the sea-floor minerals. 48

The representative of the United Nations (OETB) acknowledged the interest of his organization in joining IOC as a co-sponsor of OSNLR and offered some valuable assistance in the preparatory phase of the programme. 49

The representative of Unesco indicated that the Division of Marine Sciences was also interested in co-operating in the OSNLR programme on specific activities. 50

The Assembly was unanimous in its appreciation of the high quality of the document presented and the usefulness of the programme proposed for the Member States of the Commission, and recommended its adoption as a programme of the Commission. It emphasized the idea that implementation should take into account regional requirements and trends in the marine sciences. 51

Some delegates said that effort in the field covered by the OSNLR programme had hitherto been mainly at the national level, but believed that international co-operation is required; an international programme sponsored by IOC would fill the gap and enable a thorough investigation to be carried out. 52

The Assembly recognized that the OSNLR programme, if well implemented would open up new possibilities for developing countries. It recommended that TEMA activities in support of the OSNLR programme be given high priority, as indicated in Chapter 2.7 of document IOC-XII/8 Annex 2a. 53

The Assembly appreciated the offers made by the USSR of a vessel for deep-sea mineral exploration under an IOC/United Nations (OETB) programme; by the Netherlands of training in shallow-water geological research and exploration, and by France of training in coastal geology and deep-sea studies, particularly in view of the fact that the number of specialists in the marine geosciences in many countries, especially developing ones, is at present very low. 54

The Assembly recommended most strongly that environmental protection considerations be accorded high priority during all stages of planning and execution of programmes and projects aimed at the exploitation of the non-living resources of the sea. 55

The machinery for the implementation of the programme is discussed under agenda item 9.1.2. 56

The Assembly adopted resolution XII-2. 57

4.4 OCEAN MAPPING AND GENERAL BATHYMETRIC CHART OF THE OCEANS (GEBCO)

58 The second Vice-Chairman, Professor C. Druet, introduced this item. He pointed out that two important matters should be considered.

(i) The revised Terms of Reference for the Joint IOC/IHO Guiding Committee for GEBCO (document IOC/INF-492, 'Report by the Chairman of the Joint IOC/IHO Guiding Committee for GEBCO', p.11 Rev.1 and p.12 Rev.1).

(ii) The guidance requested by the Secretary to co-ordinate the increasing activities of the Commission in the field of bathymetry, geomorphological, geological and geophysical ocean mapping.

59 Professor E.S.W. Simpson, on behalf of the Chairman of the Joint IOC/IHO Guiding Committee for GEBCO, introduced his report on GEBCO (document IOC/INF-492) which summarizes the development of GEBCO since the establishment of the Guiding Committee in 1974. With the completion of the 5th Edition of GEBCO in 1982, the major task of the Joint IOC/IHO Guiding Committee was fulfilled. He added that the future tasks for the Guiding Committee are described and covered in the new Terms of Reference (Rev.1) proposed in document IOC/INF-492. These views were supported by the Permanent Secretary of the Guiding Committee for GEBCO.

60 The Secretary of IOC informed the Assembly that, in accordance with the decisions taken by the Executive Council, at its Fifteenth Session, to consolidate the Commission's activities in the field of ocean mapping, he had proposed a new revision (Rev.2) of the Terms of Reference, given in document IOC-XII/8 Annex 3, which were accepted, in principle, by the officers of the Guiding Committee. In view of the fact that the Twelfth Session of the International Hydrographic Conference had already approved Rev.1, and to avoid further delays, he felt that the best course of action for the Commission, under the circumstances, was to adopt Rev.1, but he emphasized the need for close co-operation and exchange of information in the future between the two organizations on projects and activities of common interest, with a view to developing further the positive co-operation already established.

61 The Director of IHO, Admiral Amaral Affonso, stated that his Organization agrees to the proposed new Terms of Reference (Rev.1), given in document IOC/INF-492, and pointed out that they have enough flexibility to allow the Guiding Committee to give assistance in the field of new oceanic cartography. IHO is convinced, however, that oceanic bathymetry still remains the main task for the Guiding Committee. IHO is willing to collaborate with IOC in exploring possibilities for small adjustments to the Terms of Reference approved by the International Hydrographic Conference, so as to meet IOC's future demands in this field.

62 The Assembly decided to adopt the revised Terms of Reference given in document IOC/INF-492.

63 The Assembly acknowledged the excellent work done by the IOC/IHO Guiding Committee and the significant contribution the 5th Edition of GEBCO makes to the advancement of marine science.

64 It thanked the Canadian Government for the assistance provided in the compilation and printing, through the Canadian Hydrographic Service, as well as the scientists who provided data and contributed to the preparation of the various sheets.

The Assembly also noted with satisfaction the successful completion of the International Bathymetric Chart of the Mediterranean (IBCM), prepared under the aegis of the Commission, and thanked the Government of the USSR for the assistance provided in the compilation and printing of this chart through the Head Department of Navigation and Oceanography. It also thanked the scientists who had collaborated in the preparation of the various sheets. 65

The Assembly agreed that the development and the co-ordination of the IOC's increasing activities in ocean mapping require further study, and instructed the Secretary to prepare a proposal for consideration by the Executive Council at its Seventeenth Session. 66

The Assembly adopted resolution XII-3. 67

4.5 OCEAN DYNAMICS AND CLIMATE

4.5.1 Large-scale ocean experiments

The Chairman of the Joint SCOR/IOC Committee on Climatic Changes and the Ocean (CCCO), Professor Roger Revelle, introduced this item. He reviewed the procedures used by the Committee in co-operation with the ICSU/WMO Joint Scientific Committee (JSC) for the World Climate Research Programme (WCRP), to develop the strategy for the oceanographic component of the WCRP. That strategy which was the central theme of the Joint CCCO/JSC Study Conference on Large-Scale Oceanographic experiments in the WCRP (Tokyo, May 1982), includes the study of the Interannual Variability of the Tropical Oceans and the Global Atmosphere (TOGA), a World Ocean Circulation Experiment (WOCE), exploratory time-series of ocean measurements, heat flux and transport studies, harmonization of on-going regional and national observing and modelling programmes, such as those in the tropical Atlantic, and the development and planning of long-term ocean monitoring requirements. Like most advances in oceanography, the oceanographic components of the WCRP will depend on the use of a combination of traditional and new technologies, such as satellites, for the observation of sea-surface temperature, wind stress and mapping of ocean-surface topography, moored and drifting buoys, expendable bathythermographs and conductivity devices, and acoustic tomography. For many purposes, the most useful instrument will be tide gauges, used to measure not tides but monthly changes of mean sea level. 68

The representative of WMO stressed the importance his organization and ICSU attach to the planning work undertaken by the Joint SCOR/IOC CCCO and the JSC of the World Climate Research Programme. They believe that the success of this ocean-basin research programme is essential to progress in our understanding of the world's climate and the impact of climate on human activities. 69

The Assembly supported the strategy proposed by CCCO and, in some cases, already implemented, and identified additional national contributions that were being considered or carried out. These included: the expansion, through the IOC's Programme Group for the Co-operative Investigation in the North and Central Western Indian Ocean (CINCWIO), of the tide-gauge network in the western Indian Ocean; the Federal Republic of Germany's Warm Water Sphere Programme in the North Atlantic; intensification of monitoring and studies in the vicinity of Japan; tide gauge and XBT programmes and the testing of new methods in the southwest Pacific by Australia, coupled with assistance for developing countries of the region in their use; a Portuguese ship-of-opportunity XBT programme between Lisbon and the Azores supplemented by sea-surface temperature, salinity and atmospheric measurements; and a series of Atlantic and Pacific tropical studies. 70

71 The Delegate of the USSR, on behalf of his own country, the German Democratic Republic, Poland and Bulgaria, submitted to the Assembly an information document on the scientific programme known as 'SECTIONS'. He also stated that his government regretted the limited acceptance of, and lack of participation in, the 'SECTIONS' programme by the international community. He pointed out that they have attempted to meet the scientific challenge to its proposals through papers presented at various meetings of the Joint SCOR/IOC CCCO and at other events, and would continue to do so.

72 The Delegate of the German Democratic Republic also expressed his regret that so limited a number of Member States had declared their readiness to participate in the 'SECTIONS' programme. He particularly recalled that several countries are already carrying out programmes and experiments for the study of selected key areas in the Atlantic and Pacific Oceans with a view to improving understanding of the role of oceanic processes in climate-related studies.

73 In reply to the Delegate of the USSR, the Chairman of the Joint SCOR/IOC CCCO pointed out that the data from the 'SECTIONS' already taken have not yet been made available to the ocean-science community at large, and therefore, it was difficult to make a scientific assessment of the 'SECTIONS' programme.

74 The Assembly emphasized the need for the entrainment of on-going and planned national research and monitoring programmes as an initial step in the implementation of the WCRP. This was particularly important in view of the tremendous expenses already incurred for climate research and monitoring, and the still larger expenditures anticipated for the large-scale climate experiments.

75 The Assembly supported the concept of national programme contributions, stressed by the USSR, and urged the Joint SCOR/IOC Committee on Climatic Changes and the Ocean to give this aspect broader consideration than it had done so far.

76 The next phase of development of the WCPP-0 will entail extensive planning, design and co-ordination. This will require greater staff and funding support as early as 1983. Several delegates urged that these resources be provided through, inter alia, contributions to the IOC Trust Fund.

77 The Delegate of the United States of America suggested that the implementation of the programme being planned by CCCO requires a scientific planning staff to augment the secretariat functions provided under the present arrangements made by SCOR, Unesco and IOC.

4.5.2 Scientific basis for ocean monitoring

78 The Chairman of the Joint SCOR/IOC Committee on Climatic Changes and the Oceans (CCCO) introduced this item. He noted that emphasis on Time Series of Ocean Measurements has been a major endeavour of CCCO and JSC, recognizing that they have both long-term climate and short-term local applications (e.g. to fisheries). Their operation will involve developed and developing countries alike, to ensure global coverage of parameters such as sea level and surface and near-surface temperature. The Joint SCOR/IOC CCCO and JSC have developed an Action Plan for an Ocean Observation System (document IOC-XII/8 Annex 4) which calls for the implementation

of observation programmes tested and designed through CCCO and operated in the framework of IGOSS. Some elements were suggested for development by single agencies (e.g. WMO--surface winds, and IOC--sea level).

The Assembly noted the comments of WMO regarding this Action Plan which were basically that WMO accepted the Plan as a basis for further development, but felt that it needed further refinement and specification of the financial implications of the different components of the Plan. 79

The Delegate of the United Kingdom stressed the proven value of sea-level measurements in a number of marine research areas, such as the prediction of the onset of 'El Niño'. He reminded the Assembly of the work of the Permanent Service for the Mean Sea Level, at the Institute of Oceanographic Sciences, in the United Kingdom, to which the IOC contributed $10,000 annually for its operation, with $7,000 coming from the Federation of Astronomical and Geophysical Services (FAGS), and $33,000 from the United Kingdom Government. He referred also to the growing importance of satellite remote sensing as a tool for oceanographic research and monitoring. 80

The Delegate of India emphasized the importance of satellite remote-sensing and the measurement of sea-level changes in the investigation of monsoons in the Indian Ocean. 81

The Assembly acknowledged the great importance of satellite remote-sensing and mean sea-level measurements for ocean research and monitoring, and asked the Executive Council at its Seventeenth Session to review the application of these techniques to ocean research and monitoring, with a view to formulating the IOC's policy with respect to them. 82 ▲

The Delegate of the USSR informed the Assembly of its proposal to hold a symposium on complex ocean monitoring for the WCRP in Tallinn, USSR, in October 1983. He suggested that this symposium, if accepted, could be a mechanism to further the development of ocean monitoring plans for the WCRP, specifically the further definition and elaboration of the Action Plan for an Ocean Observation System. He announced that the USSR had sought the support of IOC, SCOR, WMO and UNEP for this symposium. He hoped the IOC would be able to pay the expenses of ten to fifteen participants from developing countries. 83

The Assembly approved the Action Plan prepared by the Joint SCOR/IOC CCCO and requested CCCO to develop the Plan and stimulate its implementation. The Assembly requested CCCO to take into account, in this respect, the comments made by the WMO Executive Committee at its 34th Session and by the Twelfth Assembly of the IOC. 84 D ▲

It agreed that the IOC should collaborate with the USSR in convening an international symposium on integrated ocean monitoring in Tallinn in October 1983. This symposium could be used as an occasion to develop further, in co-operation with the SCOR/IOC CCCO and the WMO/ICSU JSC, the ocean monitoring aspects of the Action Plan for an Ocean Observation System. 85 D

4.5.3 Programme implementation

The Chairman of the Joint SCOR/IOC Committee on Climatic Changes and the Oceans (CCCO) introduced this item. He explained that the complex and demanding nature of the WCRP-O will require careful consideration of the mechanism for its development and implementation. It is very important that 86

the scientific community participate, particularly through SCOR, in the development of the initial stages. At a future stage, however, intergovernmental management of some programme elements will be required. The exact nature and extent of the required intergovernmental management is not presently clear. However, as the design of the experimental elements proceeds during the next one or two years, a better understanding of this need will be acquired.

87 In view of the urgency of the ocean-climate programme, particularly the need to implement the proposed large-scale oceanographic experiments, the Assembly decided to study the need for an intergovernmental mechanism. The Assembly therefore requested the Chairman of the Joint SCOR/IOC CCCO, the President of SCOR and the Chairman of IOC, to undertake this study, in collaboration with the Secretary of IOC, and report to the Seventeenth Session of the Executive Council.

88 The Assembly expressed its gratitude to Professor Revelle for having organized the Joint SCOR/IOC CCCO and leading it through its formative years, which are, perhaps, the most critical for a new programme.

89 Professor Revelle expressed his appreciation of the confidence the IOC had placed in him and hoped that his association with the Commission would continue.

90 The Assembly adopted resolution XII-4.

4.6 MARINE POLLUTION RESEARCH AND MONITORING

91 The Chairman of the IOC Working Committee for the Global Investigation of Pollution in the Marine Environment, Dr V. Gruzinov, introduced this item. He stressed the fact that all the basic planning required for GIPME had been completed and there was now a need for Member States to move forward in the implementation of the major elements of GIPME: the establishment of a Marine Pollution Monitoring System (MARPOLMON); the Determination of Background Levels of Selected Pollutants in Open-ocean Waters, and the basic marine pollution research required for the periodic assessment of the State of Health of the Oceans. He expressed the hope that the United Nations Environment Programme would actively and constructively support GIPME as the basis for its evaluations of the marine environment and the protection thereof.

4.6.1 Plan of Action for the Implementation of the Global Investigation of Pollution in the Marine Environment (GIPME)

92 The Vice-Chairman of GIPME, Dr R. Chesselet, introduced this item. He stressed the fact that GIPME had completed all the necessary planning, and momentum was building in the implementation of the programme; if continued progress was to be realized, further support from Member States is required.

93 The Technical Secretary then provided specific details of accomplishments under the programme, particularly during the period after the Fourteenth Session of the Executive Council. He referred to the various publications that have arisen from GIPME activities, including several that had been published in the open refereed scientific literature. He informed the Assembly that the planned follow-up effort in the open-ocean component of the implementation of the Comprehensive Plan for GIPME had been submitted to UNEP for support, but that no decision had been taken by UNEP to date. As

a result, Circular Letter No. 890 had been distributed to Member States requesting them to provide support to allow this exercise, which includes a strong TEMA component, to be mounted. He then outlined recent progress on specific items dealing with method development and the implementation of MARPOLMON (Petroleum). He informed the Assembly of the United States offer to function as an interim RNODC for the latter programme until another National Oceanographic Data Centre volunteers to accept this responsibility. The Japan National Oceanographic Data Centre will serve as the Responsible Oceanographic Data Centre for the WESTPAC region.

94 The Chairman-designate of the newly established GIPME Group of Experts on the Effects of Pollutants (GEEP), Dr M.G. Gross, concluded the introductory remarks by describing recent developments in that Group. He noted that GEEP, as proposed by the Fourth Session of the Working Committee for GIPME and approved by the Executive Council at its Fifteenth Session, was initiated through IOC Circular Letter No. 861, requesting Member States to nominate experts for the Group. To date, an insufficient number of nominations has been received to allow adequate geographic coverage and full scientific expertise in the composition of the Group. The strategy of GEEP will be to review the state of knowledge of effects of selected pollutants; it is contained in the Draft Summary Report of the GIPME ad hoc Group on Policy, Planning and Strategy which met on 4 October 1982, which was distributed to the Assembly for information. He noted that the Caribbean region was chosen as a case-study and that the first meeting of the Group would take place in spring 1983, to coincide with the Fifth Session of the GIPME Group of Experts on Methods, Standards and Intercalibration (GEMSI).

95 The Delegate of Egypt called for a viable plan which is not just confined to identifying sources of pollution, but to the main scientific aspects. In the light of increasing petroleum pollution of the Mediterranean, the Gulf of Suez and the Red Sea regions, the delegate felt that the implementation of the GIPME plan should be implemented in the light of the United Nations Convention on the Law of the Sea. Referring to a statement by the Director-General of Unesco, the delegate suggested that the plan should promote scientific research of tangible practical value to Member States.

96 The Delegate of Canada pointed out that the programme of GIPME was realistic and scientifically defensible and has already been approved by the Executive Council. However, only twenty-five per cent of Member States are participating. With GIPME as the architect, and TEMA providing the tools, the builders (the Member States) should intensify their activities.

97 The Delegate of the United Kingdom said that it was important to publicize effectively the accomplishments and plans of GIPME, and that reports had to be distributed in a timely manner. He also expressed his appreciation of the reports that had been made available to the Assembly.

98 The Delegate of China felt that GIPME should not only provide knowledge of a baseline nature but that mass-balance studies of river and atmospheric inputs should also be undertaken. However, for many Member States there is a number of complicated technical problems to be solved, and he hoped that the Working Committee for GIPME would take that situation into consideration and take appropriate measures so that Member States can contribute to the implementation of the programme.

99 Some delegates raised questions regarding the necessity of funds requested in Circular Letter No. 890 concerning the open-ocean programme. The Assistant Secretary pointed out that resources to support the proposed activity are not contained in the regular IOC budget, and if they are not forthcoming, either through positive responses to that Circular Letter or an eventual decision by UNEP to provide funds, this activity could not be conducted. Concern expressed over the UNEP-IOC relations in this context were referred to the discussion under agenda item 10.2 and the Chairman requested debate on this matter be reserved until that agenda item is tabled.

100 The Delegate from Greece pointed out that there had been a delay in payments by Member States to the UNEP funds, and informed the Assembly that the Greek Government has made a contribution of US $400,000 as well as hosting the UNEP Co-ordinating Unit of the Mediterranean Action Plan which was recently set up in Athens. He indicated his country's willingness to co-operate further with IOC, as in the past, and pointed out that Greek institutes are well equipped with instrumentation and trained staff who would be willing to act as experts and assist in the training of scientists in marine pollution monitoring, including those from outside the Mediterranean region.

101 The Delegate of Colombia informed the Assembly that his country would be willing to host training courses and workshops on marine pollution in its two research centres, on the Pacific and Caribbean coasts.

102 The Delegate of the United States noted that technical development of GIPME was on a firm footing. He indicated that more co-operation from Member States by enabling trained chemists and technicians to participate in workshops and meetings was needed, particularly in view of the strong TEMA requirements of GIPME. He noted that the Training Course on Marine Pollution Monitoring held in Costa Rica in August 1981 had trained 32 technicians in the use of spectrofluorimeters, with funding from IOC, Venezuela and Mexico. He noted that CARIPOL has worked well in the Caribbean and can work in other areas. He also noted that the United States at the Fourth Session of the Working Committee for GIPME, offered training facilities at the United States National Oceanographic Data Centre to train participants in data processing. Applications from seven candidates have been submitted to IOC and four will be chosen for the training in autumn 1983. He said that further applications, via IOC, would be welcome.

103 The Delegate of Argentina regretted the fact that he had only learned now that there had been vacancies on these training courses and that they had been open to all developing countries, not just those in the Caribbean region. He informed the Assembly that Argentina is developing two laboratories, in Buenos Aires and in Bahia Blanca, to study marine pollution in that region and to allow active participation in future workshops.

104 In response to the Delegate of Argentina's comment, the Vice-Chairman of IOCARIBE noted that the training in pollution data management is to be provided by the United States National Oceanographic Data Centre (NODC). The United States of America, although mainly aiming the proposed course at IOCARIBE/CARIPOL, is open to applications from any developing country. He believed that CARIPOL works extremely well and its major attributes are that it is a programme of an IOC regional body, which allows contact with the chemists in the various countries, and that an individual scientist was prepared to devote much energy to organizing the CARIPOL Steering Committee and workshops.

The Delegate of the USSR stated that the USSR will do everything it can to support the GIPME programme. However, he particularly mentioned that the USSR greatly regretted that the vessel offered for use in support of GIPME during 1982 was not taken advantage of, and hope that if, in the future, this offer were to be repeated, the IOC would take advantage of it. 105

The Delegate of Iraq informed the Assembly that the Centre of Ocean Sciences, of Basrah University, is interested in marine pollution in the Gulf region, and operates in conjunction with other centres, with the aim of issuing legislation to prevent oil pollution from tankers, and will need international assistance in this matter. He also pointed out the major difficulties facing developing countries, particularly during sampling, with its risk of sample contamination prior to analysis. 106

The Observer for the Oslo and Paris Commissions, with the support of the delegates of Belgium, Ireland, Portugual and Spain, expressed the wish that IOC's scientific programmes, especially GIPME, and its ocean services would respond to the needs being confronted by regional and global conventions, such as the Oslo, Paris and London Conventions, concerned with the protection of the marine environment, co-operating especially with ICES in this field. 107

The Assembly expressed general satisfaction with, and acceptance of, the GIPME Plan of Action, acknowledging the fine work that has been done by the individuals involved. 108

The Assembly, reserving the right of delegates to discuss IOC-UNEP relationships in agenda item 10.2, expressed its approval and strong support of the GIPME Action Plan and for its need to be made operational, at the global level, on the basis of its regional components to be developed in the framework of the regional subsidiary bodies of the Commission. The Assembly regretted the fact that UNEP had not been able to be represented during the technical discussions on marine pollution research. 109

4.6.2 Development of a Marine Pollution Monitoring System (MARPOLMON)

The Vice-Chairman of the Working Committee for GIPME, Dr R. Chesselet, introduced this item. He referred to the success of GIPME, and the intimate links between the work of its subsidiary bodies, GEMSI and GEEP, of which MARPOLMON is a logical development. The Technical Secretary stressed further that MARPOLMON provides the framework for the establishment of a monitoring network for any specific pollutant. To date, only a petroleum component is operational. For other parameters, a logical sequence in developing capabilities must be followed before the establishment of monitoring networks for other parameters can be achieved. 110

The Delegate of Egypt stressed the importance his country attached to monitoring in the Gulf of Suez and the Mediterranean Sea, and noted that his country intends to set up a centre at el-Ghardaqa; he requested Member States in GIPME to assist Egypt in participating in and carrying out, research in the Gulf of Suez and the Red Sea. 111

112 The Assembly, recognizing that much of the discussion under the previous agenda item was also applicable here, generally accepted and endorsed the programme for MARPOLMON, as a priority activity of the Commission, including the necessary steps to bring it to fruition.

4.6.3 Health of the oceans

113 The Vice-Chairman of the Working Committee for GIPME, Dr R.Chesselet, introduced this item. He noted that the health of the oceans should be approached from diverse perspectives. There is, however, still a large number of gaps in our knowledge, even though the number of recognized experts addressing the subject is high and diverse. The upgrading of this important commitment of Unesco and IOC will, he felt, take a long time still. He stressed the need for the relationship between GESAMP and GIPME to be closer than it is at present.

114 The Delegate of the United Kingdom pointed out that the report approved by GESAMP, at its Twelfth Session, in October 1981, on the Review of the Health of the Oceans has not yet been distributed in the GESAMP Reports and Studies series. However, he noted that a similar document has been issued by UNEP, and requested clarification from the Secretariat.

115 In response, the IOC Assistant Secretary said that the MARPOLMON network is intended to provide certain essential data required to update periodically the review of the health of the oceans; at present, IOC's participation in GESAMP is limited to providing, at the request of Unesco, the Technical Secretary for GESAMP. He noted that the report referred to by the delegate of the United Kingdom was indeed approved by GESAMP, in October 1981, and that, for reasons of economy and speed, it was agreed with the UNEP Regional Seas Programme Activity Centre that the word processor at UNEP would serve as a depository for the draft document. Following requests to UNEP from the Unesco Technical Secretary for GESAMP dating back to spring 1982 to make the manuscript available for publication in the GESAMP Reports and Studies series, it was only provided by UNEP in mid-September and dispatched in Unesco on 30 September 1982 to be printed by Unesco as a GESAMP report, to be available on 11 November 1982. While the Technical Secretary was awaiting the manuscript, a UNEP publication of the same document as UNEP Regional Seas Programme Reports and Studies No. 16 was received by the co-sponsoring organizations of GESAMP.

116 The Delegate of Egypt noted that UNEP could play an important role in all GIPME activities, including MARPOLMON, and in GESAMP activities. The technical aspects of the relations with UNEP appear therefore to be of paramount importance in the present discussions. He pointed out that for more than three years these relations between IOC and UNEP have been under discussion and the Member States should make concrete proposals at this session of the IOC Assembly to clarify the position.

117 The Assembly agreed to defer further discussion bearing on IOC-UNEP relations to agenda item 10.2.

5. OCEAN SERVICES

The Fourth Vice-Chairman, Professor A.R. Bayoumi, introduced this item. He noted the steady development of the IOC's ocean services since the last session of the Assembly. 118

5.1 INTEGRATED GLOBAL OCEAN SERVICES SYSTEM (IGOSS)

5.1.1 State of implementation

The Chairman of the Joint IOC/WMO Working Committee for IGOSS, Mr G.L. Holland, introduced this item. He informed the Assembly that, during the past three years, IGOSS has developed and improved its activities and services, and this period of growth and enhancement is expected to continue. Technological advances and increased co-operation will likely double the BATHY/TESAC data collected over the next few years, while decreasing the cost per unit datum. 119

One objective of IGOSS, to further the regional implementation of observing systems, was pursued through a Joint IOC/WMO Implementation Co-ordination Meeting on IGOSS in WESTPAC and NORPAX regions (Tokyo, 9-13 November 1981), and two studies undertaken by the Secretariat in the Caribbean and West African areas, respectively. 120

The Joint Working Committee for IGOSS intends to increase the quality and quantity of existing observational programmes while studying new technologies and parameters for possible addition to the IGOSS activities in the future; these include instrumented wave, drifting-buoy, current and salinity data. He noted that the agreement of the WMO to allow delayed-mode (up to thirty days after observation) data to be transmitted over the GTS will substantially increase the number of bathytnermographic data exchanged. 121

The Chairman of the Joint Working Committee urged Member States to support IGOSS fully, so that the maximum use could be made of ocean observations, and to be represented at the next session of the Joint Working Committee which will be held in Paris, 21 February to 2 March 1983. 122

The Assembly expressed its satisfaction with the progress accomplished within the framework of IGOSS, notwithstanding remaining difficulties such as those in data transmission from ships to GTS centres. It emphasized that one of the main tasks was to develop and improve the IGOSS Observing System (IOS) to provide users with better operational data. It noted with satisfaction the efforts already made to improve the quality of disseminated data and stressed the necessity for the Joint Working Committee for IGOSS to keep abreast of the latest developments in technology and cost-effective services. The Assembly also expressed its satisfaction with the support and fruitful co-operation provided by WMO to the Joint Working Committee. 123

The Assembly stressed the necessity for each country to consider the expansion of its efforts in implementing IGOSS activities. In this regard, it considered it necessary that co-ordination mechanisms be set up in participating countries to improve co-operation between the oceanographic and meteorological communities at the national level, and urged Member States to take steps in this direction. 124

5.1.2 Regional implementation

125 The Chairman of the Joint IOC/WMO Working Committee for IGOSS introduced this item. He presented three documents: 'Report of the Joint WMO/IOC Regional IGOSS Implementation Co-ordination Meeting in WESTPAC and NORPAX Regions' (document IOC/INF-493), which was held in Tokyo from 9 to 13 November 1981; a 'Proposal for the Implementation of IGOSS in the Caribbean Region' (document IOC-XII/8 Annex 6); and a 'Proposal for the Implementation of IGOSS in the Western African Region' (document IOC-XII/8 Annex 7). He highlighted the fact that the latter two documents were designed for discussion during the Third Session of the Joint IOC/WMO Working Committee for IGOSS and they were presented to the Assembly for information and comment. He brought the recommendations of the Tokyo meeting to the attention of the Assembly, referring particularly to the establishment of a small ad hoc group aimed at co-ordinating the implementation of IGOSS in the Pacific region. The recommendations of the Tokyo meeting were as follows:

'(a) Member States in the region are invited to follow the regional guidelines for the preparation of IGOSS products;

(b) Member States in the region are encouraged to insert onto the GTS late BATHY/TESAC reports up to 30 days after observation;

(c) The IGOSS implementation in the region should be extended to cover the whole of the Pacific Ocean:

(i) The extended Pacific-wide implementation programme be discussed at a future meeting with the additional Member States in the south-eastern Pacific region;

(ii) An implementation co-ordination meeting for the extended Pacific region should be convened in early 1983;

(d) A series of actions is recommended in the field of the IGOSS Observing System;

(i) Development of appropriate code forms for reporting single parameters--sea-surface temperature, salinity and sea level;

(ii) Fisheries oceanographic community to be encouraged to make available to IGOSS subsurface temperature data from fishing vessels;

(iii) Routine hydrographic surveys of the Kuroshio and East Australian Current and in the western Pacific;

(e) Member States concerned to ensure that designated coastal radio stations accept and adequately handle the BATHY/TESAC data from the Pacific Ocean basin;

(f) Designation of at least four specialized oceanographic centres for IGOSS in the Pacific region'.

The Assembly endorsed the aforementioned recommendations with the word 'hydrographic' in (d) (iii) being replaced by the word 'oceanographic'. Regarding the recommendation under (c) (ii), the Assembly took into account the fact that a similar decision has already been taken by the Executive Committee of WMO, at its Thirty-Fourth Session (Geneva, 7-24 June 1982). 126 D

The Assembly considered the present policy for regional implementation of IGOSS to be a suitable one and recommended that it be pursued. 127 D

5.1.3 Use of Drifting Buoys for Oceanographic and Other Purposes

The IOC Assistant Secretary, Dr I. Oliounine, introduced the item. He stressed the fact that drifting-buoy technology has developed and it has been shown that small expendable buoys with simple sensors have survived severe ocean environments for periods of a year and more; successful satellite positioning and data retrieval have become routine, and functional arrays of buoys have proven to be a unique source of marine data, with a measurable impact on oceanography and meteorology. There is a wide spectrum of scientific, engineering and operational problems for the solution of which, drifters may become an effective tool. 128

The representatives of SCOR and ECOR introduced their reports and underlined the importance of future co-operation of international organizations in finding the most effective networks and mechanisms for co-ordinating drifting-buoy programmes. 129

The Delegates of U.S.A., France and Argentina informed the Assembly of their involvement in drifting-buoy programmes and stressed the importance of this kind of programme in solving scientific and engineering problems. 130

The Assembly noted the main recommendations made by the Second IOC/SCOR/ECOR Consultative Meeting on Drifting Buoy Programmes (Sidney, B.C., September 1982) which requested the Joint IOC/WMO Working Committee for IGOSS to establish a small ad hoc working group to prepare a report on an appropriate cost-effective mechanism for co-ordinating drifting buoy activities. The Assembly agreed that it was important for Member States to study the proposal carefully and provide guidance on the future activities of IOC subsidiary bodies and SCOR and ECOR Working Groups dealing with the drifting-buoy programmes. 131 ▲

Regarding Resolution EC-XIII.10 by which the IOC Executive Council requested SCOR 'to prepare a final report on drifting buoys for oceanographic applications for consideration by the Twelfth Session of the Assembly' and instructed the Secretary 'to offer the WMO the report of SCOR (and ECOR) with a view to establishing in 1982 a Joint IOC/WMO Interim Group on Drifting Buoy Programmes as referred to in the Final Report of the Joint WMO/IOC Informal Planning Meeting on Drifting Buoy Programmes (December 1979)', the Assembly noted with satisfaction the reports of SCOR and ECOR submitted to the Assembly, and thanked SCOR and ECOR for their collaboration. 132

The Assembly thanked the Government of Canada for acting as host to the Second IOC/SCOR/ECOR Consultative Meeting on Drifting Buoy Programmes. 133

The Representative of WMO stated that, although the 34th Session of the WMO Executive Committee did not take a decision to establish a new joint mechanism with IOC for co-ordination of drifting-buoy programmes, it foresaw the establishment of such a mechanism at an appropriate time in the future, in the light of further programme developments. 134

135 The Assembly approved the recommendations of the Second IOC/SCOR/ECOR Consultative Meeting on Drifting Buoy Programmes, but made some amendments to the proposed functions of an ad hoc working group referred to above.

136 The Assembly agreed that the ad hoc group should:

(i) be made up of experts from Member States and international organizations operating or planning drifting buoy programmes;

(ii) prepare a report for submission to the governing bodies of the IOC and WMO for action no later than the end of 1983;

(iii) include in the study a delineation of the benefits resulting from an effective international co-ordination mechanism for drifting buoy programmes and data management;

(iv) make recommendations identifying the immediate and long-term actions required;

(v) study the appropriateness of including the following functions in those of the co-ordinating mechanism:

Co-ordination of operational programmes.

Preparation and distribution of Summary Reports (quarterly) of buoy operations.

Preparation and issue of periodic GTS bulletins on operational buoys.

Monitoring distribution of LUT data over the GTS.

Monitoring positions and movements of operational buoys.

Transfer of buoy technology particularly with regard to developing countries.

Assistance with multilateral agreements.

Development of guidelines for Member States operating LUTs.

Information dissemination.

Advice to planning bodies.

Liaison with IOC/WMO/Service Argos and others.

Interaction with regional organizations.

Data management planning.

Advice and liaison related to data archival.

Data quality.

International data exchange.

The Assembly noted that many of these functions are similar to those of the 'Meteorological and Oceanographic Joint International Committee Representative' described in Section 7.2 of the IOC/WMO document 'Extracts of the Final Report of the Meeting on Argos Joint Tariff Agreement', 7-10 December 1981. 137

The Assembly recommended that the Chairmen of SCOR and ECOR Working Groups on Drifting Buoys, the Rapporteur of the Group on Drifting Buoys of the WMO Commission for Marine Meteorology, and the Working Committee on IODE, be represented at meetings of the ad hoc group if the Agenda calls for their attendance. 138

The Assembly adopted Resolution XII-5. 139

5.2 INTERNATIONAL OCEANOGRAPHIC DATA EXCHANGE AND MARINE INFORMATION MANAGEMENT

The IOC Assistant Secretary, Dr I. Oliounine, introduced this item. He reviewed the relevant documentation for discussion, referring particularly to documents IOC/INF-499 and IOC/INF-520 which provide information on the major IODE activities since the Tenth Session of the Working Committee on International Oceanographic Data Exchange and on issues that had arisen in the course of that session of the Working Committee. 140

The major task of the Working Committee on IODE is to promote the exchange and archiving, in the World Data Centres, of oceanographic data and, through national oceanographic efforts and all marine programmes sponsored or supported by the organizations of the United Nations system, to develop standard forms and procedures for the exchange of various types of oceanographic data, and to assist in the development of National Oceanographic Data Centres. The Working Committee also promotes the facilitation of exchange of information. 141

The Chairman of the Working Committee for IODE, Mr Dieter Kohnke, introduced a report (document IOC/INF-499) on the progress and achievements since the Tenth Session of the Working Committee on IODE (Hamburg, FRG, August 1981), the report of which was approved by the IOC Executive Council at its Fifteenth Session. He particularly emphasized: the accomplishments achieved in GF-3 implementation; recognition of, and response to, marine information management requirements, which is an important upcoming task of the Working Committee to be dealt with by a Task Team on IODE's Role in Marine Information Management; co-operation with WMO in studying and planning data exchange activities and requirements for the successful implementation of the World Climate Data Programme; and with other international organizations in developing mechanisms for the exchange of marine environmental data. 142

The Chairman of the SCOR/IOC Committee on Climatic Changes and the Ocean (CCCO), Professor R. Revelle, stressed the great importance that CCCO places upon the involvement of the IOC Working Committee on IODE in WCRP planning and activities. He stated that the work of IODE is absolutely essential to the success of the WCRP and CCCO activities planned in connection with the oceanographic component of WCRP. 143

The Representative of the WMO expressed his Organization's appreciation of the activities of the Working Committee on IODE and the desire of his Organization for continued co-operation between the Working Committee on IODE and the WCP Department. He mentioned, as an example, the planned integration of parts of the Marine Environmental Data Information Referral System (MEDI) into the World Climate Programme Data Referral System--INFOCLIMA. 144

145 The Representative of the United Nations (OETB) recalled the positive events that had led to the establishment, by the Working Committee on IODE at its Tenth Session, of a Task Team on Data on Non-Living Resources in the Oceans, and expressed confidence that the work of the Task Team, and the development of the United Nations (OETB) Marine Minerals Data Centre, would strengthen the capability of the Intergovernmental Oceanographic Commission, jointly with the United Nations, to provide services to Member States.

146 The Delegate of Japan informed the Assembly that the RNODC-WESTPAC (Japan Oceanographic Data Centre), had prepared and distributed the 'WESTPAC Data Management Guide' to relevant organizations and agencies in March 1982.

147 Some Member States, while acknowledging the general growth in the volume of oceanographic data exchanged through the World Data Centre System, pointed out that there is still a tendency to increased delay in the submission of data and that this delay can have a negative impact on the availability and utilization of data in marine science and the planning of marine science programmes.

148 The Assembly emphasized the great value of oceanographic data and information exchange for the developing countries, and, in particular, for the establishment of an appropriate national marine science and ocean services infrastructure.

149 The Assembly expressed its satisfaction with the effort, dedication and achievements of the Working Committee on IODE and its ten Task Teams, and their ability to cope with an ever increasing workload.

150 The Assembly endorsed the suggestion of various Member States that the Working Committee on IODE should give special attention to the support required by the developing countries in their data and information activities and the establishment of regional and national data centres.

151 The Assembly adopted Resolution XII-6.

152 The Representative of FAO, Mr E. Akyüz, presented document IOC/INF-520 which he had prepared at the request of the Secretary IOC. He explained that he had taken into account the requirements, as he saw them from the United Nations agency perspective, for data and information exchange and marine research in general as a result of the new legal ocean regime. The document contained certain conclusions on the implications for future IOC activities in the provision of information and data services. He stated that this document was produced and intended for consideration not only by this Assembly but also for consideration by the Secretariats themselves in strengthening their co-operative programmes in information and data services, as well as by the Working Committee on IODE and its Task Team on IODE's Role in Marine Information Management. He felt that the paper may also provide useful background information to this Task Team in carrying out the work and responsibilities assigned by the Working Committee on IODE.

153 The Delegate of Canada expressed his concern with the breadth of the proposals in the FAO report which, if implemented, might lead, for example, to the re-allocation of funds from data to information management. He stressed that this and other suggestions would be matters of policy for future decision by the Assembly.

In his response to the proposals contained in document IOC/INF-520, the Chairman of the IOC Working Committee on IODE stressed the fact that the Commission had already established some procedures in the field of information management, such as Announcements of Declared National Programmes in Oceanography, Oceanographic Research Vessel Schedules and National Legislation Dealing with Marine Science Research and Related Aspects. 154

The Chairman of the IOC Working Committee for TEMA, Professor U. Lie, encouraged the Working Committee on IODE to take a more active part in the development of those ASFIS registers required to support the envisaged Country Profiles in Marine Sciences. 155

The Assembly requested the Chairman of IODE to consult with the Secretary IOC to arrange a meeting of the IODE Task Team on the IODE's Role in Marine Information Management. Together with invited experts, the Task Team should discuss the implications of additional information activities on the structure, functions and budget of the Working Committee on IODE, and submit its report to the Eleventh Session of the Working Committee on IODE for approval and further consideration at the Seventeenth Session of the Executive Council. 156

5.3 STANDARDIZATION OF OCEANOGRAPHIC PROCEDURES, SYMBOLS, UNITS AND NOMENCLATURE

The Director of Unesco, Division of Marine Sciences, Dr D. Krause, introduced this item. He drew the attention of the Assembly to the accomplishments of the Unesco/ICES/SCOR/IAPSO Joint Panel on Oceanographic Tables and Standards and the IAPSO Working Group on Symbols, Units and Nomenclature in Physical Oceanography, and highlighted the main achievements of their work. He also informed the Assembly of the efforts of the Division and IOC Secretariats in implementing Resolution EC-XIV.11, by which the IOC Executive Council recommended 'to Member States that the new Practical Salinity Scale, 1978, and the new International Equation of State of seawater, 1980, be promoted and put into general use as soon as possible, and in any case no later than January 1982'. The Equation and the Scale have been adopted by all the relevant scientific organizations with an encouragement to all producers and users of this type of data to commence using the new definitions by 1 January 1982. The Director of the Division of Marine Sciences called upon IOC Member States to endorse the new Practical Salinity Scale and the new International Equation of State of Seawater for universal use. 157

The Assembly expressed its appreciation of the work of the Joint Panel and the IAPSO Working Group, stressed the importance of the new Practical Salinity Scale and the new International Equation of State of Seawater for practical and universal use, and urged IOC Member States and other states concerned to increase their efforts to have them adopted for universal use. 158

5.4 TSUNAMI WARNING SYSTEM IN THE PACIFIC

The IOC Assistant Secretary, Dr I. Oliounine, introduced this item. He reminded the Assembly that twenty-two Member States from the Pacific region are now members of the IOC International Co-ordination Group (ICG) for the Tsunami Warning System in the Pacific. He then reviewed the Summary Report of the Eighth Session of the ICG (document IOC/ITSU-VIII/3) and stressed the importance of many decisions of the Session for the socio-economic development of Pacific nations, such as: development of a Master Plan for International Tsunami Warning Operations; preparation of additional travel charts 159

as required for the effective operation of the Tsunami Warning System; and improvements of present communication. He reported that the project entitled "Mitigation of the Tsunami Hazard in the Pacific', prepared by the IOC Secretariat in consultation with the Officers of the ICG, was submitted to UNDP. So far, UNDP has included the project in the 'pipeline list of projects'.

160 The Assembly noted with satisfaction that, as a follow-up to Resolutions XI-23 and EC-XII.11, Canada responded positively to the appeal by the Commission to nominate candidates for the post of Associate Director of the International Tsunami Information Center by seconding Mr G. Dohler to this post. Mr Dohler took up the post in July 1982 for a period of one year.

161 The Assembly emphasized the view that an efficient warning system can only be achieved if today's technology is employed effectively within the Pacific region, and if appropriate scientific and technological training, coupled with a public education and awareness programme on the dangers of tsunamis, is carried out in the long term.

162 The Assembly commended the efforts of the IOC International Co-ordination Group and the IOC Secretariat in establishing a reliable and efficient tsunami warning system in the Pacific, and expressed its gratitude to the Fijian Government for hosting the Eighth Session of the International Co-ordination Group for ITSU.

163 The Delegate of the U.S.A. informed the Assembly that his government would be pleased to host the Ninth Session of the International Co-ordination Group, in 1984.

164 The Assembly thanked the Government of the U.S.A. for this generous offer.

165 The Assembly adopted Resolution XII-7.

6. TRAINING, EDUCATION AND MUTUAL ASSISTANCE IN THE MARINE SCIENCES (TEMA)

166 The Third Vice-Chairman, Professor I.A. Ronquillo, introduced this item. He highlighted the significant trends and achievements under TEMA. In particular, he stressed the implications of the Resolution No. A/CONF.62/L.127 (Development of National Marine Science, Technology and Ocean Service Infrastructures), adopted on 30 April 1982 by the last session of the Third United Nations Conference on the Law of the Sea, for the future work of the Commission under TEMA, and for the development of a new strategy to meet the aspirations and needs of the Member States, particularly the developing countries.

6.1 COMPREHENSIVE PLAN FOR A MAJOR PROGRAMME OF ASSISTANCE TO ENHANCE THE MARINE SCIENCE CAPABILITIES OF DEVELOPING COUNTRIES

167 The Chairman of the Working Committee for TEMA, Dr U. Lie, introduced this item. He outlined document IOC/EC-V/8 Annex 5 Rev. ('Marine Science and Ocean Services for Development; A Comprehensive Plan for a Major Assistance Programme to Enhance Marine Science Capabilities of Developing Countries), and document IOC-XII/8 Annex 10 on the modalities for its implementation.

168 The Delegate of Sweden expressed her appreciation of the Comprehensive Plan, but believed that, in the further elaboration of this plan, special attention should be given to the specification of major priority areas. In the preparation and implementation of projects, increased efforts should be made, whenever appropriate, to co-ordinate or develop joint ventures with other international organizations and/or programmes of, inter alia, FAO, Unesco, WMO and the United Nations Environment Programme, taking into account the System-Wide Medium-Term Environment Programme.

169 The Delegate of India stated that the success of the Comprehensive Plan would largely depend on the active participation of developing countries and, in this particular context, some general suggestions have been made in the report, such as the development of regional and subregional projects, strengthening of national capabilities and the formulation of Country Profiles. The implementation of most of these recommendations would take a long time. He therefore proposed that training and education in marine sciences should be activities of a continuing nature, and made the following suggestions: (i) a training programme should be developed in association with the ongoing regional programmes such as CINCWIO, IOCARIBE and the Mangrove Programme of Unesco; (ii) the formulation of Country Profiles should be accelerated; (iii) there should be a follow-up of training programmes when undertaken, so that it is possible to evaluate the results of the training; (iv) institutions such as the International Ocean Institute (IOI), which are conducting excellent training programmes, should be encouraged to hold more programmes in different regions.

170 The Assembly strongly supported the approach suggested in the Comprehensive Plan. It considered that the Plan was timely, in view of the adoption of the United Nations Convention on the Law of the Sea, which is expected to be signed in December 1982.

171 The Assembly also recognized that the strengthening of national capabilities is essential for the improvement of regional co-operation, particularly in the regional activities of the Commission, and noted the important role to be played by the regional subsidiary bodies of the Commision in the formulation of project proposals under the Plan.

172 The Assembly believed that the success of the Comprehensive Plan and of the regional and subregional projects to be developed as part of it would be directly related, on one hand, to the priority that the Member States accord to marine science as an important element in the use and management of the marine resources and the protection of the marine environment, and, on the other, to the acceptance and support that it receives from the multilateral and bilateral funding agencies. It recognized that there is an important link between aid to development in general and aid to the development of marine scientific and technological capacities of developing countries.

173 The Delegate of the United Kingdom drew attention to the fact that projects funded by international and by national aid agencies are time-limited in character and there is a very unfortunate record of complete collapse of many such projects when the funding aid terminates.

174 The Assembly agreed that it is highly desirable for any such projects sponsored by the IOC to be linked to its open-ended scientific and services programmes in order to ensure that activities developed under such projects continue to operate and flourish.

175 Some delegates expressed the wish that the co-operative programmes rather than being descriptive science programmes, be designed to fulfil the socio-economic needs of developing countries in the first place. It was also suggested that efforts be made to promote better communication between developing Member States and international organizations concerned with oceanographic matters.

176 Some delegates pointed out that, in order to mobilize national capabilities, and to make use of available facilities, it is necessary to engage institutions, academic and governmental, in the formulation and improvement of marine science policy, through an effective national co-ordination mechanism.

177 Some delegates believed that it would be more practical if, for the identification of national requirements, the institutions and experts in each country would keep in mind the importance of harmonizing those national components with the IOC regional and subregional projects.

178 ▲ The Assembly considered that the existence of a national oceanographic commission or equivalent in each country is a very important element in the harmonization of marine research and its application and in maintaining adequate liaison with technical international organizations within the United Nations System, such as IOC, Unesco (Division of Marine Sciences) and others. It instructed the Secretary to take the necessary action to promote the establishment of such national marine science co-ordination mechanisms.

179 ▲ The Assembly urged the Working Committee for TEMA to continue to play its role in the further development, promotion and follow-up of the Comprehensive Plan and recommended that it continue to exercise its responsibility for advancing the TEMA component of IOC programmes.

180 ▲ The Assembly instructed the Secretary to promote the development of marine science country profiles in consultation with the Unesco Division of Marine Science, and, at the request of responsible organs in the country concerned, develop profiles that provide the basis for assessing specific needs of the countries to enable them to attain national goals in marine affairs. It also stressed the importance of keeping marine science country profiles up to date.

181 The Representative of FAO pointed out that a similar country-profile programme had been carried out by FAO, through which information on fisheries and affiliated subjects had been collected and is being maintained. He expressed the willingness of his Organization to co-operate with the Commission by providing the information available to FAO.

182 Some delegates felt that the preparation of a marine science country profile is a complex exercise, and the financial implications need to be adequately evaluated and met if the exercise is to be successful.

183 ▲ The Assembly therefore instructed the Secretary to undertake preliminary trials with a limited number of countries and present an evaluation of results of this exercise to the forthcoming Fourth Session of the Working Committee for TEMA and then to the governing bodies of the Commission, for advice on further action.

The Assembly instructed the Secretary to present this Plan to potential aid-giving agencies for consideration and support. The Assembly called on Unesco to co-operate with the Commission in organizing a meeting of the major international and national funding agencies in order to inform them of the objectives of the Plan, to ascertain their reactions, and to consider favourably possibilities for funding. 184

The Delegate of the United Kingdom stressed the importance of informing the multilateral and bilateral funding agencies of the purposes and the work of the IOC in general, in order to facilitate their appraisal of project proposals submitted by the Commission. 185

Some delegates expressed concern about the difficulty they had in identifying individual national funding agencies of IOC Member States, since they believed that support could be made available from a combination of such national agencies. 186

The Delegate of the U.S.A. informed the Assembly that it would make available to the Secretary, for distribution, a document prepared by the United States National Academy of Sciences entitled 'Marine Technical Assistance to Developing Countries--the United States Role'. 187

The Assembly felt that, under the Comprehensive Plan, additional responsibilities could fall on regional and subregional bodies. Therefore, the Assembly instructed the Secretary to prepare a document which analyses the financial and programmatic implications of the Plan for these bodies, and to circulate this document to Member States in advance of the Seventeenth Session of the Executive Council. It suggested that the Secretary make use of the ad hoc Co-ordination Group for TEMA for this purpose. 188

The Assembly requested the Director-General of Unesco to provide all possible support to the promotion and implementation of the Comprehensive Plan and of its subregional and regional projects. 189

The Assembly adopted Resolution XII-8. 190

6.2 TEMA COMPONENTS OF IOC PROGRAMMES

The IOC Assistant Secretary, Dr S.M. Haq, introduced this item. He outlined document IOC-XII/8 Annex II (TEMA Components of IOC Programmes and Proposals on Implementation), which reflects the recommendations made by the regional and technical subsidiary bodies of the Commission for training activities that cannot be implemented within the IOC regular budget. Some encouraging results were obtained in the past by combining the limited budgetary funds of the Commission with contributions from some donor countries, which enabled the training of a larger number of scientists and technicians than would otherwise have been the case. 191

Some delegates noted that the relation between the objectives of the Plan and the ones presented in document IOC-XII/8 Annex II called for clarification. 192

The IOC Assistant Secretary explained that the objective of the Comprehensive Plan was, in part, to enhance, through regional and subregional projects, the marine science capabilities, strengthen marine science organizational infrastructure and assist the governments in defining their marine policy, as well as to develop regional co-operation through, among other 193

things, common regional centres, networks, consortia of institutions and common services. The training requirements referred to in the document IOC-XII/8 Annex II are a reflection of specific needs of the developing countries concerned relative to the ongoing programmes of the Commission.

194 Some delegates suggested that the role of regional subsidiary bodies of the Commission should be to enhance the co-operative ocean science and ocean services programmes in accordance with the priorities determined by the countries of the region, as well as to recommend areas that could form the basis for the development of regional and subregional projects.

195 The Delegate of China informed the Assembly that his country would be happy to co-operate with Unesco and IOC in the implementation of the Comprehensive Plan and to contribute to its TEMA elements through the following five fields of action:

(i) study missions by scientists and administrators from developing countries in the field of oceanography;

(ii) provision of possibilities for working in Chinese laboratories as well as on board Chinese research vessels;

(iii) organization of short training courses on subjects selected on the basis of needs of developing countries;

(iv) provision of simple oceanographic instruments and apparatus; and

(v) provision of technical advice, on request.

196 The Delegate of Japan indicated that his country would continue to extend its support for TEMA activities relating to the WESTPAC programmes by offering shipboard research and training opportunities to scientists from the developing countries, by hosting a training course in oceanographic data processing and management, and by sending experts consultants to the countries of the region.

197 The Delegate of India expressed his appreciation of the co-operation offered by China and Japan in TEMA activities, and offered his country's support to other developing countries in the Indian Ocean Region through: (i) ship-board training; (ii) institutional training in various fields of marine science, including marine geophysics and marine instrumentation; and (iii) processing and management of oceanographic data.

198 The Delegate of Portugal restated his country's offer, made at the Third Session of the Working Committee for TEMA (Buenos Aires, 21-26 April 1980), of the use of its new research vessel by the IOC, starting in March 1984, in the implementation of its Comprehensive Plan. The conditions of this use will be worked out with the Commission in due course. The Delegate also informed the Assembly that a Portuguese University had offered to accept foreign students, especially from Portuguese- and Spanish-speaking countries, under its Physical Oceanography Teaching Programme, which covers four semesters and is at the undergraduate level. Also, a postgraduate course (leading to an M. Sc. degree) in physical oceanography will be offered by the University of Lisbon starting in 1984 or 1985. The Portuguese Government will offer, under its bilateral co-operation agreements, some fellowships for candidates from Portuguese-speaking African countries.

199 The Delegate of Yugoslavia informed the Assembly that the Yugoslav educational and research organizations educate and train fishery personnel from the developing countries. The Institute of Oceanography and Fisheries, in Split, started in 1981 to train fishery personnel from Africa, Asia and South America; 20-25 students are trained every year. The course is organized by the Yugoslavian Foundation for Developing Countries, with the financial support of the Netherlands Government. These endeavours have also been stimulated by FAO.

200 The Delegate of the USSR announced that his country is giving, and will continue to give, concrete assistance to developing countries under TEMA in strengthening their marine scientific infrastructures. Many specialists from developing countries are studying marine sciences in the universities and other scientific institutes of the Soviet Union. The USSR enables up to fifteen specialists from the developing countries to take part annually in the scientific work of USSR research vessels.

201 The Delegate of Canada stated that his country was exploring the possibility of obtaining funding to cover travel and accommodation expenses for up to ten trainees annually from developing countries in the field of physical, chemical and biological oceanography, marine geology and geophysics, hydrographic surveying and marine data processing.

202 The Delegate of France announced that her government would be ready to organize and host a training course in oceanographic data and to provide some fellowships for the course to scientists from developing countries. She stressed, however, that her country could offer much more than this and would make the relevant information available to the Secretary.

203 The Delegate of the Netherlands said her government will be negotiating soon, with IOC, support for the training of 20 marine geologists in shallow-water geological exploration.

204 The Delegate of the Federal Republic of Germany announced that his government is prepared to finance a training course on living marine resources in a country of the CINCWIO region in 1983.

205 The Delegate of Sweden announced that his country intended to support the MARPOLMON intercalibration exercise with US $3,000, and, in so doing, hoped that other countries would follow Sweden's example and make the intercalibration efforts feasible.

206 The Delegate of Cuba said that the adoption of the Convention on the Law of the Sea, which he hoped would be signed by a large number of Member States and come rapidly into force, and the development of the new ocean regime, would prompt a favourable reaction from international funding agencies and lead to a corresponding development of IOC's activities and role in the study and protection of the marine environment. The Delegate pointed to the need for better co-ordination between international organizations specialized in marine sciences. Specifically, he sought a better co-ordination of the programmes and activities of the IOC, Unesco Division of Marine Sciences, UNEP, FAO and others in related fields.

207 The Delegate of Argentina expressed his satisfaction with the development of TEMA on the basis of the programme laid down at the Third Session of the Working Committee in Buenos Aires (April 1980), which was enabling Member States to work actively in the marine sciences and the Commission to meet its responsibilities under Article 2 (2) of its Statutes.

208 The Delegate of Denmark informed the Assembly that his country and FAO will conduct three regional and five naitonal courses, each followed by a number of fellowships in fish-stock assessment methods for fishery biologists from tropical regions.

209 The Chairman of IOCARIBE suggested that the developing countries must give priority to marine science and provide necessary support for it. He stated that National Training Contacts or TEMA Co-ordinators should be part of the National Oceanographic Commissions or equivalent bodies and that institutional arrangements between institutions of developed and developing countries have proved to be effective. Shipboard training facilities that are offered by developed countries could benefit the developing countries if the programme of training is communicated well in advance to the IOC Secretariat, and those training programmes taking place in the regions should be part of the approved programme of the regional bodies. He suggested that the scientists to be trained should be selected on merit and that they should be provided with necessary facilities and conditions to enable them to continue their work at the level justified by the training provided to them. He said that it was necessary that the developing countries not only seek assistance from the developed countries; they could benefit equally from expertise in other developing countries.

210 ▲ The Assembly instructed the Secretary to compile a list of current TEMA opportunities provided to the IOC by its Member States, and to distribute this list as an IOC/INF ocument.

211 ▲ The Assembly agreed that the IOC should play an active role in catalyzing bilateral assistance for co-operation in training relating to the scientific programmes and ocean services of the Commission. It noted the effective results obtained through the utilization of the IOC Trust Fund contribution in the past and encouraged Member States to increase their contribution to it in the future.

212 The Assembly also recognized that the IOC Voluntary Assistance Programme of IOC had so far met with very little success, in comparison with the WMO Voluntary Co-operation Programme, by which it was inspired. The main reason for this is that the world meteorological community is differently structured, nationally, from the oceanographic community. Most countries have one meteorological or hydrometeorological office which acts as a focal point for all meteorological matters including funding of international programmes and activities, whereas the administration of oceanography is much more fragmented.

213 ▲ The Assembly requested the Working Committee for TEMA, at its Fourth Session, to discuss in detail the Commission's activities under the IOC-VAP, and to submit recommendations to the following Session of the Executive Council on the need for retaining IOC-VAP, and, if retained, on how to improve its operation.

214 ▲ On the question of regional TEMA Co-ordinators, the Assembly considered that, in view of increased co-operation between IOC and Unesco Regional Offices for Science and Technology, and the new responsibilities assigned to their Marine Science Officers to act as IOC Assistant Secretaries for the Commission's regional subsidiary bodies in their respective areas, the functions of regional TEMA Co-ordinators should be reviewed by the Fourth Session of the Working Committee for TEMA, to determine whether such Co-ordinators are necessary or not.

The Chairman of the Joint IOC/WMO Working Committee for IGOSS reported that the TEMA Co-ordinator for IGOSS, Capt. R. Nawratil of Argentina, in co-operation with the Chairman of the Working Committee and the IGOSS officers, had undertaken a study of the TEMA requirements of Member States participating in IGOSS. The results of this study will be discussed in detail at the Third Session of the Working Committee for IGOSS in 1983. 215

The Chairman of the Working Committee on International Oceanographic Data Exchange believed that a decision on the continuation of the TEMA Co-ordinator for IODE matters should be made by the Working Committee on IODE, taking into account the results of the Fourth Session of the Working Committee for TEMA. 216

The Chairman of the Working Committee for GIPME also believed that a TEMA Co-ordinator in his Committee has served, and would continue to serve, a useful purpose. 217

On the question of National Training Contacts (NTC), the Assembly agreed that NTCs should preferably be located within entities such as national oceanographic co-ordinating bodies (e.g., National Oceanographic Commissions or equivalent bodies), with the appropriate secretariat support and with access to relevant authorities concerned with marine affairs as well as with training or mutual assistance activities. 218

7. IMPLICATIONS FOR THE IOC OF DEVELOPMENTS IN INTERNATIONAL AFFAIRS

7.1 ELEVENTH SESSION OF THE UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA

The Secretary introduced this item. He explained that it was essentially for information only, and briefly reviewed the status of the United Nations Convention on the Law of the Sea. A resolution on Development of National Marine Science, Technology and Ocean Service Infrastructures, which was submitted by the Group of 77, was adopted by UNCLOS on 30 April 1982. He also referred to the warm letter of thanks sent by Dr Bernardo Zuleta, Under Secretary-General and Special Representative of the Secretary-General to UNCLOS, to the Director-General of Unesco on 28 October 1982 for the close co-operation and invaluable assistance provided by Unesco and the IOC to the Third United Nations Conference on the Law of the Sea, and inviting close co-operation in the future implementation of the Convention. 219

The Assembly took into account the second paragraph of Mr Zuleta's letter* in its deliberations on TEMA, particularly those related to the Comprehensive Plan for a Major Programme of Assistance to Enhance the Marine Science Capabilities of Developing Countries. 220

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* 'I would like to take this opportunity also of emphasizing the particular importance that should be attached to the relationship between the future of the progress in developing national marine science, technology and ocean service infrastructures, the subject of the resolution adopted by the Conference and now transmitted to the General Assembly by the Secretary-General (A/37/566). We are in full agreement that unless and until states can develop sufficient capabilities in these sectors, it must be questioned whether there can be full enjoyment of the rights bestowed by the Convention and assumption of the responsibilities entailed. An even closer co-operation between the United Nations and Unesco and its IOC is now required, particularly for the purpose of ensuring that the Organization can fulfil its responsibilities in areas which will greatly influence the acceptance and implementation of the Convention'.

221 ▲ The Assembly agreed that the IOC's participation in UNCLOS had been valuable for the Commission and that the Secretary should inform the United Nations of the IOC's desire to be represented at the first and subsequent sessions of the Preparatory Commission dealing with items of immediate interest to the IOC.

7.2 AD HOC TASK TEAM TO STUDY THE DRAFT CONVENTION ON THE LAW OF THE SEA AND ANY FUTURE TEXT DEVELOPED BY UNCLOS, AND THE IMPLICATIONS FOR THE COMMISSION

222 The Vice-Chairman of the Task Team, Mlle M-A Martin-Sané, who also chaired the Second Session of the Task Team (New York, July 1982), introduced this item. She reminded the Assembly that the Task Team had first met just before the Fourteenth Session of the Executive Council, in Tenerife, in June 1981, under the interim Chairmanship of Professor A.R. Bayoumi. She called on the Secretary to outline the Task Team's work to date.

223 The Secretary explained that the Task Team had identified 57 Articles of the Convention that could have implications for the Commission and that it had decided to group them into five broad functions: (i) Ocean Sciences; (ii) Ocean Services; (iii) The Enhancement of Marine Scientific Capabilities; (iv) The Provision of Scientific and Technical Advisory Services to Other Organizations and Member States; (v) Organizational and Legal Aspects.

224 The implications of these Articles for the Commission had been assessed as regards their likely impact on the role and the programmes of the Intergovernmental Oceanographic Commission, but there had not been sufficient time to address, other than in a preliminary way, the possible budgetary, staffing, structural and statutory implications for the Commission.

225 The Assembly noted that the Task Team had recognized a possible need for the provision of technical assistance to Member States, at their request, in the formulation of national policy on marine scientific research in marine zones under national jurisdiction, so that national marine scientific policies in this field could reflect the new demands on Member States resulting from the Convention.

226 ▶ The Assembly agreed that the Member States should be given assistance in this field at their request.

227 The Assembly stressed the usefulness to Unesco as a whole and to IOC in particular of the evaluation being made by the Task Team.

228 The Delegate of Brazil cautioned the Commission on proceeding too quickly, referring to the fact that the Convention would take several years before coming into full effect, so there was, he believed, a danger of prejudging implications for the Commission.

229 Several delegations stated that a considerable amount of work had still to be done by the Task Team.

230 The Delegate of the Federal Republic of Germany pointed out that the Task Team had so far only identified the articles that might generally have implications for the Commission, but had not yet determined the practical aspects of those implications. She thought that this was an important step to be taken before examining any programmatic, budgetary or staffing implications.

The Delegate of Canada said he thought that some of the statements in 231
the Summary Report of the Second Session of the Task Team (document IOC/TT-LOSI-II/3) referring to the Commission's role in ocean mapping and geological and geophysical data exchange had gone beyond the present and foreseeable responsibilities of the Commission's role in ocean mapping and an eventual failure to meet the expectations of Member States and other organizations.

The Assembly agreed that the Task Team had done its work well and 232
recommended that the Task Team continue its work to complete its assignment. Before meeting again, however, careful preparations should be made by correspondence in order to save time at the meeting itself and to focus the Task Team's efforts. The programmatic, budgetary, staffing and statutory implications of the Articles are the most important matters to be addressed.

The Assembly agreed that the Task Team should continue to consist of the 233
members of the Executive Council and representatives of other interested Member States. In view of the election of the present Chairman of the Task Team as Chairman of the Commission, and of the present Vice-Chairman of the Task Team as First Vice-Chairman of the Commission, the Assembly invited the outgoing Chairman of the Commission, Dr Augustín Ayala-Castañares, to assume the Chairmanship of the Task Team; Dr Ayala accepted this invitation.

Bearing in mind studies relevant to the activities of the Task Team 234
already carried out by consultants and by the Federal Republic of Germany, the Assembly welcomed the effort by the Secretary to make a compilation of national legislation on marine scientific research in zones under national jurisdiction, and recommended that this effort be continued. It invited Member States to furnish relevant information, as requested by the Executive Council at its Fourteenth Session.

7.3 UPDATING OF THE LONG-TERM AND EXPANDED PROGRAMME OF OCEANIC EXPLORATION AND RESEARCH (LEPOR)

The Secretary introduced this item. He explained the background of 235
document IOC-XII/8 Annex 12 (Updating of LEPOR). He reminded the participants that a landmark in the history of IOC had been reached when the United Nations General Assembly recognized the Commission as the competent body in the United Nations system to co-ordinate the preparation and implementation of the Long-term and Expanded Programme of Oceanic Exploration and Research. This responsibility, as well as the conclusions of the IOC Assembly regarding the report on Ocean Science for the Year 2000, and other proposals for research programmes, should be kept in mind during consideration of this Agenda Item.

The proposed procedure would comprise two phases: 236

The first phase, which could be undertaken by an expert consultation 237
convened in the second half of 1983, would result in a document, to be presented to the Seventeenth Session of the Executive Council, containing an annotated table of ongoing and planned scientific exercises of relevance to LEPOR and promising research projects or activities being proposed or planned (e.g., OSLR, OSNLR, Ocean Dynamics and climate, etc.). Experts invited to participate in the consultation would be drawn from those associated with preparation of the report on Ocean Science for the Year 2000, from the membership of the IOC Scientific Review Board, and co-opted experts, if required, to be appointed by the Chairman of the Commission. If necessary, a consultant may be requested to assist the Secretariat in preparation of background material.

238 In the second phase, based upon the conclusions of the expert consultation, and subsequent decisions of the Executive Council, a UN inter-agency consultation would be arranged in the first half of 1984 for the purpose of reviewing the scientific projects identified by the expert consultation, in order to issue a revised Comprehensive Outline of the Scope of LEPOR, including general guidance regarding its implementation by concerned agencies, which would be submitted to ECOSOC in the summer of 1984 and, subsequently, to the United Nations General Assembly in late 1984. Details on the procedures to be followed in convening the inter-agency meeting would be discussed at the next session of ICSPRO and at other appropriate inter-agency consultations.

239 The Representative of the United Nations expressed the interest of his Organization, particularly its Ocean Economics and Technology Branch, in the proposal to update LEPOR. He felt that the proposed procedures were technically sound and feasible and that obtaining the endorsement of ECOSOC and the United Nations General Assembly would enhance the possibilities of funding through United Nations sources. He assured the Assembly of the full and constructive role that the United Nations (OETB) intended to play in this endeavour.

240 The Representative of the FAO also supported the proposal and drew attention to the forthcoming FAO World Conference on Fisheries Management and Development which will take place in 1984, the scientific background papers for which would be relevant to any revision of LEPOR.

241 The Second Vice-Chairman, Professor C. Druet, noted that the report 'Ocean Science for the Year 2000' had received general support by the Assembly. As Acting Chairman of the Scientific Review Board, he reminded the Assembly of the role to be played by the Board in ensuring the continuing review of the Commission's programme.

242 Many delegates stated that the general approach proposed in document IOC-XII/8 Annex 12 was acceptable, but some word of caution was expressed regarding the need to be realistic in the Commission's planning, which should focus on international co-operative research, and take due account of the requirements of developing countries, so as to ensure that the updating of LEPOR would meet the objective of facilitating the participation of all Member States in the activities of the Commission and in other forms of international co-operation in the field of ocean affairs.

243 ▲ The Assembly endorsed the proposal of the Secretariat outlined in paragraphs 236, 237 and 238 above, on the updating of LEPOR, and recommended that due account be taken of the comments referred to above, as well as the following considerations:

(i) Procedures set down by the First Session of the Scientific Review Board should be taken into account when preparing documentation for the expert consultation referred to in phase one.

(ii) Any 'updating' of LEPOR should be conceived as the second phase of LEPOR rather than as a revision, and the report on Ocean Science for the Year 2000 should be used as the basis for this.

(iii) In applying the results of the report on Ocean Science for the Year 2000 to the IOC programme, due consideration should be given to the conclusions of the IOC Working Group on the Future Role and Functions of the Commission (FUROF) as adopted by the Eleventh Session of the Assembly.

The Assembly instructed the Secretary to: (i) undertake the first phase of the proposal to review LEPOR in the light of accomplishments to date and anticipated marine research activities, taking into account the comments of the Assembly at the present Session, and report to the Seventeenth Session of the Executive Council; (ii) include this matter, especially the inter-agency arrangements for the second phase, on the agenda of the next Session of the Inter-secretariat Committee on Scientific Programmes Relating to Oceanography. 244

7.4 INTERNATIONAL CONFERENCE ON OCEAN DATA ACQUISITION SYSTEMS (ODAS)

The IOC Assistant Secretary, Mr Y. Tréglos, introduced this item. He recalled that the first Unesco/IMO Preparatory Conference of Governmental Experts to Formulate a Draft Convention on the Legal Status of Ocean Data Acquisition Systems (ODAS)[1] was held in Paris in 1972. The Conference was unable to complete its work and adopted Resolution 2 which recommended 'to Unesco and IMO that they consider convening a second session of the Preparatory Conference...' 245

Later, IOC and IMO envisaged that a Second Preparatory Conference of Governmental Experts on the Legal Status of ODAS would be convened once the Third United Nations Conference on the Law of the Sea had completed its work. 246

In 1980, the European Programme for Co-operation in the Field of Scientific and Technological Research, through its project 43--'Setting up of an experimental European network of ocean stations' (COST-43), identified an urgent need to change the recommended systems for ODAS identification and markings and to assign to all ODAS a unique identification number and country abbreviation. 247

Consequently, IOC initiated informal consultations with IMO and COST-43 in December 1981, in London, to find practical solutions to the problems of: adequate marking and signalling of anchored and drifting buoys; registration of, and information on, the buoys; and the legal status of the buoys. 248

In October 1982, the IMO Subcommittee on Safety of Navigation and the International Association of Lighthouse Authorities jointly considered the revised Technical Annexes on Marking and Signals submitted by COST-43 through IOC, and adopted proposals on Signals and Marking. (Relevant extracts of the final report of the Session were made available to the Assembly (as document IOC/INF-521) and will be sent later, by the Secretary IOC, to the Member States of the Commission.) 249

The above-mentioned consultative meeting in London in December 1981 also proposed that a technical group of experts be established to consider different kinds of technical and legal problems relevant to ODAS, in preparation for the envisaged second Preparatory Conference. 250

The Delegate of Canada expressed his concern that the sponsorship of an ODAS Convention would place a considerable burden on the resources of the Commission, and he doubted whether it would be justified under the present circumstances. 251

1. ODAS means a structure, platform, installation, buoy or other device, not being a ship, together with its equipment, deployed at sea essentially for the purpose of collecting, storing or transmitting samples or data relating to the marine environment or the atmosphere or the uses thereof.

252 The Delegate of the Netherlands wondered whether the IOC should take the lead in convening such a Conference, or whether it should be left to the IMO.

253 The Assembly decided, however, that the IOC should continue to work closely with IMO and Unesco, and that the matter of a possible ODAS Convention should be addressed in two stages:

(i) The Secretariats of IMO and IOC should explore existing material, compile it and suggest possible modifications and/or amendments to the draft text of the Convention;

(ii) The Executive Council should assess the results of their preparatory work and, taking into account the views of IMO, decide on further actions to be undertaken; i.e., whether or not to convene a Second Preparatory Conference of Governmental Experts to Formulate a Draft Convention on the Legal Status of ODAS, and to advise IMO and Unesco accordingly.

254 The Assembly adopted Resolution XII-9.

8. MEDIUM-TERM PLAN, PROGRAMME AND BUDGET

255 The First Vice-Chairman, Dr N.J. Campbell, introduced this item. He outlined documents 4 XC/4 (Draft Medium-Term Plan (1984-89)), IOC-XII/7 (Programme of Work and Financial Requirements), IOC-XII/8 Annex 13 (Proposals for the IOC Programme and Budget for 1984-85), MARINF/42 (Report of the Division of Marine Sciences) and its Addendum, extracts from the Decisions of the 115th Session of the Unesco Executive Board, and from 4 XC/4, Part III (Proposed Resolutions to the Fourth Extraordinary Session of the Unesco General Conference), as well as the relevant parts of the Action Paper (IOC-XII/8), applying to all three sub-items (8.1, 8.2 and 8.3).

8.1 UNESCO MEDIUM-TERM PLAN (1984-89)

256 The First Vice-Chairman introduced this item. He spoke on the Draft Unesco Medium-Term Plan, and was followed by the Secretary and the Director of the Division of Marine Sciences. They underlined the fact that the Director-General of Unesco had, on several occasions, expressed his strong support for marine research. The Executive Board of Unesco, at its 115th Session, had equally stressed the importance of the marine science programme in the Board's Decision 4.1.

257 The Assembly noted that the Draft Medium-Term Plan contains two ocean-related programmes, X.4 (The Ocean and its Resources) and X.5 (Management of Coastal and Island Regions), both being part of the Major Programme X on the Human Environment and Terrestrial and Marine Resources.

258 The First Vice-Chairman identified two key issues: the need to strengthen marine science and to maintain its coherence in the Unesco Medium-Term Plan so that, in carrying out its responsibilities under Article 2 (h) of its Statutes, the Commission can ensure an appropriate response to the wishes of its Member States.

Several delegates expressed the view that marine research on coastal systems is an inseparable component of oceanographic research that interfaces with open-ocean research, as well as providing an input to coastal area management. 259

The Assembly welcomed the Director-General's expressions of support to the marine science programme and noted with satisfaction that recommendations to strengthen Programme X.4 were contained in Decision 4.1 of the 115th Session of the Unesco Executive Board as well as in the proposed resolution on Major Programme X, especially paragraph 14 (e) to be presented by the Director-General to the Fourth Extraordinary Session of the Unesco General Conference. 260

The Assembly was of the unanimous view that the position given to Programme X.4 in the Draft Medium-Term Plan could still be improved to respond to the recommendations referred to above. It also believed that adjustments were required in the formulation of paragraphs 13.4 and 13.5 of the proposed resolution on Programme X to reflect better an integrated approach to the study of marine science in the light of the role and functions of the Commission as defined by its Statutes, leading to a subsequent rewording of Programmes X.4 and X.5 of the Medium-Term Plan. 261

The Assembly was of the strong opinion that the marine science programme justifies a high priority and called on the Delegates of IOC Member States to brief their national delegations to the Fourth Extraordinary Session of the Unesco General Conference on the importance of marine science, as expressed in the Assembly decisions, so as to enable them to represent fully IOC's interests. 262

The Assembly noted with pleasure that several IOC Member States had, in fact, emphasized the importance of the Commission through their members on the Executive Board of Unesco at the 115th Session of the Board. 263

The Assembly instructed the IOC Secretary to make a strong effort to increase public-relations activities in order to acquaint decision makers as well as the general public with IOC's programmes and objectives. 264

The Assembly recognized that the new programmes of OSLR and OSNLR serve as key instruments in maintaining the unity of ocean and coastal marine scientific programmes. 265

The Assembly adopted Resolution XII-10. 266

8.2 IOC PROGRAMME AND BUDGET FOR 1984-85

The First Vice-Chairman introduced this item. He addressed document IOC-XII/8 Annex 13 (Proposal for the IOC Programme and Budget for 1984-85) and document IOC-XII/7 (Programme of Work and Financial Requirements). As indications of budgetary resources have not yet been given by the Unesco General Conference, he invited the Assembly to focus on guidance to the Secretary. He reminded the Assembly that the Executive Council had called for a 50 per cent increase in the marine science budget. However, contingency proposals based on lower levels of resources might have to be envisaged. 267

Several delegates expressed their appreciation of the excellent work of the First Vice-Chairman and the Secretary in producing the proposal for the IOC Programme and Budget for 1984-85. 268

269 Several delegates noted that consideration of this item had been made difficult since Unesco had not yet taken a decision on the Commission's budgetary allocations for the 1984-85 period, and they therefore felt that an in-depth study of the proposed 1984-85 budget for the Commission was not appropriate at this time. Nevertheless, they considered that a reasonable approach had been taken under the present circumstances to allocate a percentage of the budget to each of the Commission's programmes, and that it had taken into account the principles and priorities established by the Commission.

270 The Assembly instructed the Secretary, when finalizing proposals for inclusion in the Draft Programme and Budget for 1984-85 (22 C/5), to make the appropriate adjustments based upon the decisions of the Fourth Extraordinary Session of the Unesco General Conference, consulting, as necessary, the Officers of the Commission. Obviously, the new activities of the Commission, OSLR and OSNLR, as well as Ocean Dynamics and Climate, have to be taken fully into account.

271 The Assembly considered possible financial management alternatives put forward by the First Vice-Chairman for contingency planning and instructed the Secretary to present the study on such alternatives to the Seventeenth Session of the Executive Council, basing it upon guidelines to be drawn up by the First Vice-Chairman and undertaking it in consultation with the Officers of the Commission and the Chairmen of the major IOC subsidiary bodies.

272 Regarding staff, the Assembly agreed that a definite need will arise for at least two additional posts in 1984, for Assistant Secretaries for IOCARIBE and for Ocean Dynamics and Climate. In fact, these problems will arise prior to the 1984-85 biennium, since the present funding provided by the United States in support of IOCARIBE will end in March 1983 and that for the Secretary of the Joint SCOR/IOC Committee on Climatic Changes and the Oceans, at the end of 1983.

273 The Assembly also felt that it was also essential to have a post for a scientist in the field of marine geology as a key element in the secretariat support required for OSNLR.

274 Several delegates felt that the percentage allocated to TEMA activities should be maintained at least at its present level; TEMA is a key activity of the Commission, and meeting its financial requirements is essential for carrying out the IOC's role and function.

275 The Chairman of TEMA said that he considered it necessary that adequate funding be provided for TEMA activities, but he emphasized that funds for training courses should come mainly from extra-budgetary sources. He also stated that a three-year meeting cycle would be acceptable to the Working Committee for TEMA, but that provisions for delegates' and officers' travel were essential to meetings of the TEMA ad hoc Group for Co-ordination and implementation, the functions of which would be even more important if the meeting cycle were to be extended to three years.

276 Some delegates pointed out the need to ensure appropriate allocation of funds for regional subsidiary bodies of the Commission, if they are to be effective in implementing regional programmes and regional elements of the Commission's global programmes. The draft budget does not show a sufficient increase of funding for regional activities. Also, all the new priorities that might emerge from an increased use of the ocean and its resources as a result of the implementation of the Convention on the Law of the Sea and the new ocean regime need to be emphasized in the programme of work of the Commission.

The Delegate of Turkey emphasized the need for the IOC to strengthen its activities in the Mediterranean region and to ensure that its assistance programmes were extended to countries of that region. 277

The Assembly adopted Resolutions XII-11 and XII-12. 278

8.3 PROGRAMME AND BUDGET OF THE UNESCO DIVISION OF MARINE SCIENCES

The First Vice-Chairman introduced this item. He invited the Director of the Division of Marine Sciences, Dr D.C. Krause, to introduce the Division's programme as reflected in documents 4 XC/4 and MARINF/42 and 42 Add. The Director of the Division indicated that firm guidelines and budgetary provisions do not yet exist from Unesco's side, and that his presentation had the character of a rough draft only. He said that the Division's programme is implemented with the help of the five Unesco Regional Offices for Science and Technology, as well as through other divisions in Unesco, particularly in regard to fellowships and UNDP projects. He welcomed the close co-operation with the IOC which he wanted to see strengthened and continued. He then introduced the proposed programmes of the Division for 1984-85. He described the Division's strategy of approach to the development of these programmes and indicated the principal new initiatives contained in the proposals, such as assisting laboratories to use remote-sensing products and strengthening the capability of countries to manage the use of their coastal marine resources and environment. 279

Several delegates expressed their views on the Division's programme, indicating their appreciation to the Director of the Division for his well-balanced presentation. They also welcomed the Division's programme on national infrastructure development in IOC Member States and noted that this was an important element in support of the global and regional programmes of the Commission. They further stressed the need for continued and improved co-operation and co-ordination with the IOC, and the careful avoidance of duplication of effort. 280

The Delegate of Venezuela pointed out that a situation had arisen in his region in which a scientific workshop was being held at the same time as the Assembly and urged that, in future, such conflicts be avoided. 281

The Secretary of IOC said that he was very satisfied with the close co-operation with the Division and that he wished to continue to develop further such mutually supportive activities, with a view to improving the use of the available resources to respond to the increasing requests from Member States. 282

The Delegate of Kenya said that his country would like to see the use of the Open University Course in Marine Science extended and strengthened in East Africa. His concern was shared by others who advocated that the course should be made available to other areas as well. 283

The Assembly felt that the advice given by the Commission to Unesco on the Division's programme, in accordance with the Statutes, should continue and be, in the future, more specific and detailed. 284

In this context, the First Vice-Chairman cited examples of programmes with a high potential for complementary action on the part of the IOC and the Division of Marine Sciences, such as: workshops on high- and low-diversity fish communities; co-operative arrangements for the promotion of the Programme of Ocean Science in Relation to Non-living Resources; and assistance in providing expertise in mean sea-level measurements. 285

286 The Delegate of Egypt thanked the Division for the support and attention he had received for the 50th Anniversary of the Mabahiss--John Murray Expedition, and he noted the need to mobilize support for this activity and to encourage follow-up by IOC of this promising regional research effort.

287 The Assembly adopted Resolution XII-13.

9. STRUCTURE AND FUNCTIONING OF THE COMMISSION AND ITS REGIONAL SUBSIDIARY BODIES

9.1 NEW MECHANISMS FOR CO-OPERATION

9.1.1 Concept of IOC Regional Subcommissions

288 The Secretary introduced this item. He recalled the consideration by IOCARIBE, when discussing its future status following the completion of its experimental six-year period as an IOC Association, of a proposal to become a Subcommission of the IOC. The Executive Council, at its Fifteenth Session, had concluded that 'circumstances may arise where the regional activities of the Commission may need a status and continuity not provided for by any of the existing arrangements available to the Commission, and that it would be useful to agree upon the concept'. The Council established certain basic conditions and circumstances that should be taken into account when a decision to establish a Subcommission is being taken: '(i) the countries of the region are already actively engaged in co-operative investigations or have demonstrated their interest in doing so; (ii) an existing regional subsidiary body of the Commission formally requests the Assembly to recognize it as belonging in this new category of subsidiary body; (iii) the budget and secretariat services required for the effective functioning of a Subcommission can be made available'. The Council instructed the Secretary to prepare a proposal (document IOC-XII/8 Annex 15) for the consideration of the Assembly. The Secretary briefly explained the genesis of this document, pointing out that it represented a general synthesis of views expressed by Member States individually, and collectively through the Executive Council, and was meant to serve as a basis for discussion.

289 Several delegations stressed the importance of building a Subcommission on a foundation of successful international regional co-operative marine research and related activities, and others felt that the creation of formal regional subsidiary bodies of the Commission, as the proposed Subcommissions, would promote international co-operative research not only at the regional level, but at the global level as well. The importance of applying the three basic criteria laid down by the Executive Council was stressed.

290 A great majority of the Member States favoured the concept of regional IOC Subcommissions. Nevertheless, some concern about the application of the concept was expressed.

291 Several delegates expressed a wish to safeguard against the proliferation of unviable Subcommissions or the risk of fragmentation of the Commission. A few delegates questioned the term 'subcommission', but it was generally agreed that the prefix 'sub' indicated clearly that the proposed body belonged to a parent body, and, in any case, the creation of a regional subcommission remained an exclusive prerogative of the Assembly.

Several delegates believed it necessary that, in order to give IOC regional Subcommissions the best chance of success, the organizations of the United Nations system, including Unesco, its IOC and its Division of Marine Sciences, rapidly and effectively co-ordinate their activities so as to avoid the development of similar or particularly parallel programmes in any given region. 292

Appreciable concern was expressed over the need to ensure the availability of the essential budgetary and secretariat resources for a Subcommission to function properly. The IOCARIBE experience had shown that these were significant but certainly not insurmountable problems. 293

The Assembly stressed the importance of not simply diverting existing resources from approved programmes of the Commission to support a new Subcommission. 294

In discussing the proposed guidelines for the structure and responsibilities of the regional Subcommissions of IOC (document IOC-XII/8 Annex 15 rev.) several delegates considered that they required further analysis before approval, whereas others believed that they constituted an acceptable basis for the first of such Subcommissions, that for IOCARIBE (see Agenda Item 9.2.1), and could be reviewed at the next Assembly, in accordance with Rule of Procedure No. 24, in the light of the experience gained in their application. 295

The Secretary pointed out that the guidelines had been given a lot of thought during their preparation and had been closely patterned on existing approved guidelines for comparable subsidiary bodies, such as Programme Groups. He suggested that they were even more precise than those now applied to other subsidiary bodies and, in any case, were always open to amendment if Member States so wished. 296

The Delegate of the USSR suggested that Member States could send proposals for changes to the Secretary, for eventual consideration by the next Assembly, but favoured the adoption of the present version. 297

Several delegates believed that this was the best course of action, especially since the Assembly was obliged to take a decision on IOCARIBE at the present Session. 298

The Assembly therefore decided to adopt the text given in document IOC-XII/8 Annex 15 rev. as the Guidelines for the Structure and Responsibilities of the Regional Subcommissions with minor amendments to the title; also the titles of sections 1 and 2 were adjusted to conform with existing guidelines for other subsidiary bodies of the Commission. 299 D

The Assembly agreed that, since it was an internal matter of the Commission, there was no need for a resolution on the creation of this new category of subsidiary body, since the decision to create was reflected in Resolution XII-16 on the creation of an IOC Regional Subcommission for IOCARIBE. 300 D

The Assembly instructed the Secretary to incorporate these Guidelines into the Summary Report of the present Session (See Annex V) and into the IOC Manual, Part I, Section V. 301 ▲

9.1.2 Machinery for the Implementation of the Programmes of Ocean Science in Relation to Living Resources and of Ocean Science in Relation to Non-Living Resources

302 The Secretary introduced this item. He referred to document IOC-XII/8 Annex 1b (Proposal on Mechanisms for Implementation of an IOC/FAO Programme on Ocean Science in Relation to Living Resources) and the analogous document IOC-XII/8 Annex 2b (Proposal on Mechanisms for Implementation of a Programme on Ocean Science in Relation to Non-Living Resources) and invited the Assembly to determine what type of mechanism it believed could best implement these two new programmes of the Commission: a guiding group of experts, operating as an IOC Group of Experts, to advise the IOC on the conduct of the programme as a whole, and/or Task Teams of the IOC regional subsidiary bodies to promote and co-ordinate the regional components of OSLR and OSNLR.

303 The Assembly agreed to consider these two programmes separately.

304 The Representative of FAO informed the Assembly that the OSLR proposal had not yet been formally discussed by FAO. He believed that more background on the proposed programme was needed, since document IOC-XII/8 Annex 1b had been developed on the basis of only informal contacts between the FAO and IOC Secretariats.

305 The Director of the Unesco Division of Marine Sciences, Dr D.C. Krause, informed the Assembly that Unesco has many ongoing activities relevant to the proposed programme on OSLR, particularly on tropical, high-diversity marine ecosystems, and referred particularly to the Major Unesco Interregional Project on Training and Research, with a View to Integrated Management of Marine Coastal Systems (COMAR). He felt it appropriate, therefore, that the Division co-operate with the sponsoring organizations of this programme on appropriate activities. Should the Division's role become important, he believed the Division might propose at a later date that Unesco be considered also as a co-sponsor of specific parts (research and training components) of OSLR.

306 The Assembly expressed its sincere thanks to SCOR and ACMRR for the useful basic proposal submitted to the Commission by the SCOR/ACMRR Working Group No. 67 on Oceanography, Marine Ecology and Living Resources, and to Dr Richard Barber, Chairman of the Working Group.

307 The Assembly noted the views formulated by Committee I that the proposal on OSLR needs further development. Particularly with respect to OSLR, it felt that the implementation mechanism was highly dependent on the scientific content of the programme and the means needed for its execution.

308 The Assembly therefore recommended that first a small Group of Experts be formed by the Chairman of IOC to organize a workshop to develop the practical and the scientific details of the OSLR programme. It decided to establish a scientific Guiding Group of Experts, which would include leaders of any regional Task Teams that might be formed to oversee regional components of OSLR, as well as representatives of SCOR, ACMRR and Unesco (OCE), and, when necessary, scientists who had been closely associated with the development of OSLR. The Guiding Group of Experts should be requested by the Secretary to submit a detailed implementation proposal, based on the results of the Workshop and other relevant elements, to the Seventeenth Session of the Executive Council.

309 The Delegate of Canada informed the Committee that his country would be pleased to host the proposed Workshop on IREX.

The Assembly welcomed this generous offer. 310

The Delegate of the United States suggested another possible workshop on automated plankton-sorting systems. He mentioned a prototype system at the Narragansett Laboratory of the United States National Marine Fisheries Service that has automated image analyses with improved photo-optical systems which, it is believed, should meet the present needs of IREX and IREP. Other prototype systems are known to exist elsewhere. Hence, a workshop might consider all of these systems, as well as undertaking: (i) a review of present technology available for rapid sorting and counting of fish eggs, larvae, and of their zooplanktonic predators; (ii) an evaluation of the potential of the systems as support for IREX or IREP studies, particularly in developing countries; (iii) an identification of modifications to the most promising system for operation in developing countries; and (iv) the preparation of a detailed description of these systems, to be included in the workshop report. 311

The Narragansett Laboratory would be pleased to co-operate with the OSLR Guiding Group of Experts, the IOC Secretary and possibly SCOR and ACMRR, in organizing such a workshop, which might be part of the workshop on IREX offered by Canada or a follow-up to that workshop. This suggestion will be referred to the OSLR Guiding Group of Experts and the Secretary for appropriate action. 312

The Assembly recognized that the substantial amount of data and information built up by FAO on fish stocks, and FAO's considerable experience and interest in their study, would be invaluable for the success of the OSLR Programme. 313

The Assembly invited FAO to co-sponsor OSLR and to participate in the Guiding Group of Experts. 314 D

Some delegates suggested that the Secretary should draw on the relevant expertise of the Scientific Review Board in the implementation of the OSLR Programme. 315

Regarding the programme on OSNLR, the Director of the Unesco Division of Marine Sciences, said that his Division was also interested in participating in certain elements of this programme. 316

The Assembly expressed its sincere thanks to Professor E.S.W. Simpson, President of SCOR, and the co-sponsors of the Third International Workshop on Marine Geoscience for their contributions to the formulation of the proposal on a programme of Ocean Sciences in Relation to Non-Living Resources. 317

The Assembly requested the regional subsidiary bodies of the Commission to analyse the proposed programme and submit to the Secretary their proposals for the implementation of this programme on a regional basis, when the programme enters the execution phase. 318 ▲

The Assembly decided to form a Guiding Group of Experts to assign priorities and develop the operational components of the programme. 319 D

The Assembly invited the United Nations to co-sponsor the programme through its Ocean Economics and Technology Branch (OETB). 320 D

9.2 REGIONAL SUBSIDIARY BODIES

The Secretary introduced this item. He informed the Assembly of the background to the IOC study on 'Regional Co-operation in Marine Science' (document IOC/INF-417) 321

322 The Assembly noted the comments made by Member States and co-operating organizations in document IOC/INF-407 rev. corr. and instructed the Secretary to introduce an item on the follow-up, particularly the execution of Phase II, and, in due course, of Phase III, into the Agenda of the next session of ICSPRO, with a request to the ICSPRO organizations to undertake the required follow-up.

323 The Delegates of India, Pakistan and Sri Lanka called attention to the fact that since the end of the International Indian Ocean Expedition, about 20 years ago, no activities had been undertaken by the Commission in the Central Indian Ocean region--from the Arabic Peninsula up to the Bay of Bengal. During this period the countries of the region had continued to develop their activities in the field of marine sciences and to collaborate among themselves on an ad hoc basis, contributing also to global scientific programmes and ocean services of the Commission. The area in question offers most interesting ocean phenomena for study, some of them of great value for the solution of problems relating to the use of the ocean and its resources. These studies and related TEMA aspects could greatly benefit from the existence of a mechanism for co-operation among the countries of the region and other interested Member States of the Commission. It was suggested that an IOC regional subsidiary body for the Central Indian Ocean be established and that a Workshop be convened in 1983 to review the state of knowledge, identify problems, the study of which could benefit from international co-operation, and to identify specific projects for co-operative research activities. These delegates submitted Draft Resolution 19 rev. to that effect.

324 Some delegations, while recognizing the need for the Commission to deal with the Central Indian Ocean Region, expressed their reservation regarding the immediate establishment of a Subcommission. In their view, such a proposal could only emanate from a pre-existing subsidiary body of the Commission, such as a Programme Group, after an evaluation has been made of the activities in the region. Other delegates, however, felt that this was a rather restrictive approach and expressed the opinion that it should be possible to establish subcommissions directly if the circumstances so dictated and it was the wish of the Member States concerned.

325 One delegate suggested that an IOC subsidiary body (or bodies) for the Indian Ocean should be based on the oceanographic regions of the Indian Ocean: either, two bodies--one for the western Indian Ocean including the Arabian Sea and another for the eastern Indian Ocean, including the Bay of Bengal, or one body for the Indian Ocean as a whole; in his view the central Indian Ocean is not classically defined as an oceanographic region.

326 The Assembly favoured the convening of a workshop to review the situation in the area and to provide a basis for action, and instructed the Secretary to that effect.

327 The Delegate of Pakistan referred to the proposal to create a Programme Group for the Central Indian Ocean (CINDIO), and offered to host the IOC Secretariat for the eventual Programme Group, as well as the First Session thereof.

328 The Secretary pointed out that Unesco was in the process of nominating a Marine Science Officer/IOC Assistant Secretary to the Unesco Regional Office of Science and Technology for Central and South Asia which would, for the immediate future provide the IOC secretariat support to the region, including that for the Programme Group for CINDIO. Nevertheless, he welcomed the offer and said he would maintain contact with the Delegate of Pakistan, in due course, with regard to his proposal.

The Assembly welcomed the offer from the Delegate of Pakistan. 329

The Assembly also stressed the importance of the Secretary's encouraging the Member States, by all the means available to him, to promote marine scientific research in the region. 330

The Assembly adopted Resolution XII-14. 331

The Delegate of Peru, speaking on behalf of the Delegations of Chile, Colombia, Ecuador and Peru, as well as in his former capacity as Secretary-General of CPPS, affirmed the close co-operation between CPPS and the IOC with respect to marine scientific research in the south-east Pacific. He also recalled that although CPPS is not a subsidiary body of the IOC, the four governments hope that this collaboration would become even closer, given the nature of CPPS as an appropriate marine organization in that region. 332

9.2.1 IOC Association for the Caribbean and Adjacent Regions (IOCARIBE)

The Chairman of IOCARIBE, Professor M. Murillo, introduced this item. He referred to document IOC/INF-495 (An Evaluation of IOCARIBE), outlining the history of the Association and its precursor, the Co-operative Investigations of the Caribbean and Adjacent Regions (CICAR). He stressed the fact that, in spite of certain difficulties in terms of Member States' participation, design and development of programmes, regional secretariat support and staffing, finance, and co-operation with some relevant international organizations, IOCARIBE had been a considerable success. The number of trained marine scientists and technicians, marine research institutions, oceanographic vessels and equipment, had all substantially increased in the region and he believed that this was due in no small measure to the stimulating and catalysing effect of IOCARIBE. Certain programmes were successful, particularly the Marine Pollution Programme (CARIPOL), but it had become clear that programmes developed on the basis of localized subregional projects were much less successful because of the restricted involvement of Member States. He expressed his appreciation of the continued support from the participating Member States. He also stressed the fact that during the 6-year life of the Association, only 7.5 per cent of the funds devoted to the Association had come from the IOC's Regular Budget. 333

The Delegate of the Netherlands reminded the Assembly of his country's long association with, first, CICAR, and later, IOCARIBE; he stressed the fact that CICAR itself arose from the experience of the International Co-operative Investigations of the Tropical Atlantic (ICITA). 334

The Delegate of the Ukrainian SSR stressed the fact that his country had actively participated in research in the Caribbean since the very beginning of the CICAR programme. At present, research vessels of the Ukrainian SSR conduct expeditions to this region regularly twice a year. They are engaged in a 'SECTIONS' programme. Scientists from the countries of the Caribbean are regularly invited to take part and to participate in research activities aboard these vessels. He also underlined the necessity of having regional research activities as an obligatory component of global programmes. It was noted that the Caribbean region is one of the key areas that has been studied within the framework of the 'SECTIONS' programme. Therefore there is a real chance to enhance regional research and to promote TEMA activities. 335

The Assembly agreed that the success and the usefulness of IOCARIBE (and its precursor) clearly outweighed the difficulties. 336

337 The Assembly decided to establish an IOC Subcommission for the Caribbean and Adjacent Regions (IOCARIBE), with the general terms of reference for IOC Subcommissions given in Annex V to this Report.

338 The Delegate of Egypt believed that, if this and other regional Subcommissions are to be created, the IOC should consider eventually creating the post of Fifth Vice-Chairman.

339 Some delegates stressed the importance of ensuring that adequate funding and other forms of support were made available by the Member States concerned, and by the Commission itself, if the concept, as applied in this region, was to work.

340 The Assembly noted that the IOC Assistant Secretary for the IOCARIBE had been supported by the U.S.A., through its contribution to the IOC Trust Fund since the inception of the Association, and that this support would have to be provided in future by the IOC or found from other sources.

341 The Secretary informed the Assembly that negotiations with the U.S.A. were going on to ensure an extension of this support until 1984 when IOC is expected to take over, should the proposals made in the budget for 1984-85 be approved by Unesco. He also referred to the possible extension of the support provided by the Government of Costa Rica.

342 The Assembly called on Member States to contribute to the IOC Trust Fund as a means of providing the required secretariat support for the Subcommission, to appeal to the Governments of Costa Rica and the United States, in particular, to continue their contribution to IOC secretariat support for IOCARIBE, until its next Session, and encourage Member States of the Subcommission to improve their national mechanisms for liaison with the IOC secretariat and with other Member States.

343 The Delegate of Colombia informed the Assembly that his country was prepared to host the IOC Secretariat for IOCARIBE, and would announce this offer at the First Session of the IOC Subcommission for IOCARIBE which it also offered to host.

344 The Assembly thanked the Delegate of Colombia for his generous offer.

345 The Assembly adopted Resolutions XII-15 and XII-16.

9.2.2 Programme Group for the Western Pacific (WESTPAC) and Joint Bodies

346 The Assistant Secretary, Mr Ray C. Griffiths, introduced this item. He recalled the five major programmes, and their corresponding subsidiary bodies (of the Programme Group), agreed at the Second Session of the Programme Group in Jakarta (October 1981): Ocean dynamics, coastal oceanography, marine biology and living resources, marine pollution research and monitoring, and marine geology and geophysics. He informed the Assembly that the Programme Group had welcomed the concept of regional subcommissions although it had decided that, pending the evaluation of the experience of the IOC Association for the Caribbean and Adjacent Regions, it would continue to function as a Programme Group. He also explained that a proposal (document IOC-XII/3 Annex 16) had been received from the CCOP-SOPAC that the IOC co-sponsor a Joint Working Group on South Pacific Studies of Tectonics and Resources (STAR), as an analogous group to the CCOP/IOC Joint Working Group on South East Asia Tectonics and Resources (SEATAR).

The Delegate of Japan informed the Assembly that the 'RNODC Newsletter for WESTPAC, No.1' and the 'WESTPAC DATA MANAGEMENT GUIDES' had been published in March 1982, by the Japanese Oceanographic Data Centre acting as RNODC-WESTPAC. He also recalled that his country had supported IOC activities under WESTPAC through an annual Trust Fund contribution of $30,000 for the period 1981-82. 347

Some delegates from the WESTPAC region expressed the view that the establishment of an IOC Regional Subcommission for WESTPAC was still premature. 348

The Delegation of the United States recalled that the Programme Group for WESTPAC had decided that, while a subcommission might be a desirable structure for WESTPAC in the future, 'WESTPAC research programmes were still at an early stage and there was still a need to demonstrate the effectiveness of WESTPAC to the countries of the region' (document IOC/WESTPAC-II/3 para. 98). 349

The Assembly agreed that a proposal on the establishment of a regional IOC Subcommission for WESTPAC must come from the Programme Group itself. The Assembly noted that the Programme Group had expressed a wish to study the Evaluation of IOCARIBE (document IOC/INF-495) before giving further consideration to the idea of an IOC Subcommission for WESTPAC, and instructed the Secretary to include this document (IOC/INF-495) in the documentation for the Third Session of the Programme Group. 350

Regarding the CCOP-SOPAC proposal, the Secretary reminded the Committee of the long-standing collaboration between IOC and CCOP, and CCOP-SOPAC, and the fact that CCOP-SOPAC had indicated its intention to seek IOC co-sponsorship of STAR over a year ago; the Assembly should, he believed, keep this in mind if it wished to give an unequivocal indication to CCOP-SOPAC of its wish and intention to co-operate as actively with CCOP-SOPAC as it had done, and continues to do, with CCOP. The IOC's efforts to consolidate and develop its activities in geological and geophysical ocean mapping would greatly benefit from such collaboration, as far as the WESTPAC region was concerned, such an arrangement would also provide opportunities for implementation of OSNLR in the region. 351

The Delegate of Japan felt that a clear programme justification had not been given for the proposed budgetary requirements for 1983 and expressed concern over the possible budgetary implications beyond 1983, particularly in view of the instability of the staffing situation at the CCOP-SOPAC Technical Secretariat, which, according to document IOC-XII/8 Annex 16, presently has two staff seconded by the Member States on a non-permanent basis. He also regretted that in preparing the proposal, the Secretary had not been able to consult the WESTPAC Technical Correspondent for Marine Geology and Geophysics as requested by the Programme Group for WESTPAC at its Second Session. 352

The Australian Delegation agreed that substantial benefits could derive from the establishment of a joint working group as proposed by CCOP-SOPAC, but any decision by IOC on the proposal must reflect the views and wishes of IOC Member States of the region. Their views could only be expressed when a detailed proposal, including detailed Terms of Reference, is available for consideration. 353

The Delegate of the Philippines fully approved the long-standing collaboration between the IOC and CCOP, and CCOP-SOPAC, and stressed the fact that CCOP-SOPAC has indicated its intention to seek IOC co-sponsorship of STAR over a year ago; therefore he agreed fully with the Secretary's views on this, and supported the statement of the Delegate of Australia on the substantial benefits that could be derived from the establishment of a joint working group as proposed by CCOP-SOPAC. 354

355 The Assembly expressed a strong continuing interest in co-operation between the IOC and the CCOP-SOPAC. It noted, however, that the proposal submitted by CCOP-SOPAC contained only a very general statement of the proposed functions of the Group and only one brief Term of Reference.

356 The Assembly instructed the Secretary to work with the Secretariat of CCOP-SOPAC to prepare detailed Terms of Reference and a more detailed and careful analysis of the programme and the related financial implications over the Medium-Term, with a view to submitting a revised proposal to the Seventeenth Session of the Executive Council. It also instructed the Secretary, in consultation with the Programme Group for WESTPAC, to identify, in the interim, specific projects of CCOP-SOPAC and WESTPAC in which IOC could collaborate closely with CCOP-SOPAC within the currently available budget, whether regular programme or extra-budgetary funds.

9.2.3 Programme Group for the North and Central Western Indian Ocean (CINCWIO)

357 The IOC Assistant Secretary, Mr George Kitaka, introduced this item. He reported that the First Session of the Programme Group for the Co-operative Investigation in the North and Central Western Indian Ocean (CINCWIO) was held at the Unesco Regional Office for Science and Technology for Africa (ROSTA) in Nairobi, Kenya, from 4 to 8 October 1982. The Session was chaired by Professor S.K. Imbamba (Kenya). The Programme Group adopted nine decisions, one of which (the recommendation for the disbandment of the Technical Advisory Group for CINCWIO) required the immediate action of the Assembly.

358 Professor A.S. Msangi of Tanzania was elected Chairman, and Mr A. Ralison of Madagascar was elected Vice-Chairman, at the completion of the Session in Paris on 4 November 1982.

359 The Delegate of India expressed his country's interest in the CINCWIO programme, since it was related to a part of the Indian Ocean in which India was most interested. He expressed his country's willingness to support the programme by providing ship-board data, as well as ship-board and institutional training for scientists of that region.

360 The Delegate of the Federal Republic of Germany stated that her government had followed the CINCWIO-meeting with great interest and had studied the idea of providing financial support for an International Bathymetric Chart of the Western Indian Ocean in 1983 but had not found that possible. Nevertheless, the Federal Republic of Germany would, in 1983, fund a training course on marine living resources in the region. Regarding the proposal for libraries in the region to establish partnership arrangements with libraries in developed countries, she suggested that the interested libraries in the region draw up details of how such arrangements could operate. This would facilitate the governments' approach to the relevant libraries in their countries.

361 The Assembly thanked the Delegate of the Federal Republic of Germany for this expression of interest in supporting these CINCWIO activities.

362 The Delegate of the United Kingdom pointed out that the compilation of bathymetric chart series takes some years and costs of production and printing of this series (and similar series in other regions) would be unlikely to fall on the governments concerned until 1985 at the earliest. However, at the same time, it should be stated that it would not be justifiable to start such compilation until an agreement had been reached on the production and printing at a later date.

The Assembly considered the Summary Report of the First Session (document IOC/CINCWIO-I/3) and noted the excellent and realistic scientific projects CINCWIO plans to undertake. 363

The Assembly emphasized the importance of developing and strengthening an observing system for monitoring sea-level in the region, as a most useful exercise and one that would yield invaluable data for the study of various oceanographic and meteorological phenomena. 364

The Assembly endorsed the Decisions given in the Summary Report of the First Session of the Programme Group for the North and Central Western Indian Ocean (CINCWIO), and accepted the Summary Report, including the scientific programmes adopted by the Programme Group, to be implemented within the limits of the financial resources provided by the IOC for CINCWIO. 365

9.2.4 Programme Group for the Southern Oceans (SOC)

The Secretary introduced this item. He reported that the Fourth Session of the Programme Group planned for 1982 was not held but that preparations were in progress to hold the session in Paris from 7 to 12 March 1983. 366

The Executive Secretary of SCOR informed the Committee that SCOR had formed a new Working Group to: identify gaps in our understanding of physical and chemical oceanographic processes in the Southern Ocean; to suggest scientific approaches to fill these gaps; and to communicate the results of their work on these topics to the Programme Group for SOC. 367

The Assembly took note of these developments. 368

9.2.5 Proposed Activities for Western Africa

The Secretary introduced this item. He reported on a number of developments concerning the western African region, mentioning, among other things, the possibility of assistance from the Government of France in the preparation and production of a bathymetric chart for the area, a mission to the area by a staff member, jointly with an expert made available by France, and the possibility of joint efforts by the IOC and the Division of Marine Sciences in the organization, in the first half of 1983, of the proposed Workshop on Marine Science Co-operation, which had been called for by Resolution XI-18. He informed the Assembly that preparations for the Workshop were already under way. 369

The Delegate of the Ivory Coast thanked the Governments of France and Spain for their efforts to develop marine science and technology in West Africa. He asked the IOC and the Unesco Division of Marine Sciences to take into account the ECA/UNDP Project on the Development of Marine Science and Technology in Africa, and the UNEP Action Plan for western Africa. He also stressed the importance in his region of the study of sediment dynamics, geophysical phenomena, the development of IGOSS and any eventual activity under GSLR. 370

Some delegates spoke on the urgency of establishing machinery for co-operation in the western African region. 371

The Delegate of France expressed wholehearted support for the Secretary's efforts and described initiatives taking place in France to locate funds for the proposed bathymetric charts, to promote collaborative research in West Africa, and to organize training courses. 372

373 The Delegate of Spain kindly offered to the Commission the facilities of the new research laboratory of the Spanish Institute of Oceanography at Santa Cruz de Tenerife and the assistance required for purposes of hosting the proposed workshop on marine scientific co-operation in western Africa. He announced that the five fellowships pledged by Spain for the training of western African scientists had been approved and would be awarded as soon as the Secretary of IOC provided the names of the beneficiaries.

374 The Assembly acknowledged these contributions with thanks, but noted that much work needed to be done in the western African region, particularly under TEMA, so as to contribute to the strengthening of national capabilities in marine sciences.

9.3 FREQUENCY AND TIMING OF EXECUTIVE COUNCIL SESSIONS

375 The Secretary introduced this item. He referred to document IOC-XII/8 Annex 17, (Frequency of Executive Council Sessions), explaining that, in his opinion, substantial economies would be achieved if the number of Executive Council meetings could be reduced, and that difficulties in providing documentation could be overcome if the timing of the Executive Council meetings did not conflict with the sessions of the Unesco General Conference or Executive Board. He went on to describe three choices which were outlined in the document and which he invited the Committee to consider.

376 The Assembly recalled the discussion on this subject at the Fourteenth and Fifteenth Sessions of the Executive Council. It recognized that the costs, in terms of budget, logistics and staff resources, of organizing, convening and following up a session of the Executive Council represent a considerable proportion of the Commission's resources which could be partially redeployed in the implementation of programmes.

377 The Assembly was strongly in favour of having one major meeting (7-8 working days) approximately half way between two ordinary sessions of the Assembly, and a short meeting of the Council acting also as the Steering Committee for the Assembly (Option II in document IOC-XII/8 Annex 17).

378 Several delegates noted that this would be easier for the Secretariat and Member States alike by allowing more time for the preparation and distribution of documentation and for the implementation of decisions.

379 In choosing Option II, the Assembly noted that the Executive Council could, if necessary, meet in Extraordinary Session. It also appreciated the fact that the choice of Option II would mean moving the dates of the Executive Council from the customary October-November period to early in the New Year, and noted that the Secretary would address this matter under Agenda Item 13 in Plenary.

380 The Assembly adopted Resolution XII-17.

381 The Assembly amended Rule of Procedure No. 19 accordingly.

10. AGREEMENTS WITH OTHER ORGANIZATIONS OF THE UNITED NATIONS SYSTEM AND OTHER BODIES

382 The Chairman introduced this item. He suggested that, in discussing it, the Member States should keep in mind that one of the main purposes of the Commission was to provide the scientific basis, through research and monitoring, for resource development and management activities, including environmental protection, by other international organizations.

Some delegates indicated that this form of technical co-operation would be particularly important with respect to the main international conventions dealing with the protection of the marine environment on a global or regional basis. 383

The Vice-Chairman of the Consultative Meetings of the London Dumping Convention informed the Assembly that this sort of support from the IOC would be welcomed by his organization. 384

The Assembly agreed that the Commission should respond positively to any invitation to be represented at the Consultative Meetings of the London Dumping Convention, and that the IOC Representative should inform such meetings of the willingness of IOC to make available its expertise, particularly through the Working Committee for GIPME and the related activities under the Marine Pollution Monitoring Programme (MARPOLMON), to assist in the research and monitoring requirements related to ocean dumping and to other activities under the Convention requiring scientific inputs and data. 385

The Assembly instructed the Secretary to establish and develop contacts with the Convention Secretariat with a view to facilitating the above-mentioned co-operation, and to explore the possibility of making similar arrangements with other appropriate international organizations. 386

The Vice-Chairman of the Working Committee for GIPME recalled that IOC is providing, on behalf of Unesco, the Unesco Technical Secretary for the IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP Group of Experts on Scientific Aspects of Marine Pollution (GESAMP) and that the periodic evaluation of the 'State of Health of the Oceans' by GESAMP will depend to a great extent on progress in marine pollution research and monitoring undertaken under GIPME and MARPOLMON. For this reason, the Fourth Session of the Working Committee for GIPME considered it highly desirable that relations between IOC and GESAMP become closer. He then introduced the proposal to have the IOC more closely and more formally associated with GESAMP. 387

The Assembly noted that the possibility of IOC's co-sponsoring GESAMP had already been discussed at a GESAMP Intersecretariat Meeting in October 1981, when the revision of the GESAMP Memorandum of Understanding was under consideration. 388

The Assembly recalled that a review of the Health of the Oceans had been one of the main raisons d'être of the Global Investigation of Pollution in the Marine Environment since its inception, and that the Working Committee for GIPME had invited GESAMP to undertake such a review, particularly in the light of advances in knowledge and understanding since the publication, by the Commission, of Professor E.D. Goldberg's book entitled 'Health of the Oceans'. 389

It therefore believed that a much closer association of the IOC with GESAMP would be highly beneficial to Member States and to the co-sponsoring organizations of GESAMP. 390

The Assembly adopted Resolution XII-18. 391

The Delegate of Egypt informed the Assembly that his country, together with the United Kingdom, will convene, in September 1983 in Alexandria, an international symposium to commemorate the fiftieth anniversary of the John Murray Expedition to the Indian Ocean on board the R.V. MABAHISS from September 1933 to May 1934. This symposium will review progress in oceanography in this region during the last fifty years and discuss future work in the eastern Mediterranean, the Red Sea, the north-western Indian Ocean and its adjacent gulfs. 392

393 The Assembly welcomed this symposium as providing a useful opportunity for promoting IOC activities in this region.

394 The Assembly adopted Resolution XII-19.

10.1 INTERSECRETARIAT COMMITTEE ON SCIENTIFIC PROGRAMMES RELATING TO OCEANOGRAPHY (ICSPRO)

395 The Secretary introduced this item. He informed the Assembly that, owing to various scheduling problems and the heavy pressure of work in the Secretariats of the organizations members of ICSPRO, it had not been possible to hold an ICSPRO meeting in 1982. However, two meetings are planned for 1983: the Twenty-second Session will analyse major outcomes of the Twelfth Session of the Assembly in the fields of ocean science, ocean services and TEMA; and the Twenty-third Session will be used to decide on modalities of co-operation or joint action on matters of common interest to the various organizations concerned, including action at the regional level, and to determine ways and means of enhancing the implementation of the ICSPRO Agreement.

396 The Assembly noted these developments and stressed the importance of an active and effective ICSPRO for purposes of co-ordination amongst the sponsoring organizations.

10.2 UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

397 The Secretary introduced this item. He drew the Assembly's attention to the corresponding section of the Action Paper (document IOC-XII/8).

398 The Delegate of Brazil reminded the Assembly of the status of UNEP; it is not a specialized agency, an executive body or an international organization with its own Member State representation. UNEP is a programme, and part of the overall activity of the United Nations; it came into being pursuant to Resolution 6 of the United Nations Conference on the Human Environment held in Stockholm in 1972. Its role is to serve as a focal point in the United Nations system for the consideration of environmental problems and to catalyse undertakings by governments at the national, regional and global levels, taking into account the activities of other organizations. The Executive Director is a member of the United Nations Secretariat and responsible to the Secretary-General. Since the Eleventh Session of the IOC Assembly, little progress has been made in formalizing co-operation between IOC and UNEP through the signature of a Memorandum of Understanding, in spite of the efforts of the Secretary in accordance with instructions given to him by the Executive Council. He believed that the task of strengthening co-ordination and co-operation between the IOC and UNEP might best be pursued in two ways: firstly, the Chairman of IOC should attend the Governing Council of UNEP with a clear mandate from the Assembly as to the ways and means by which the interests of the Member States of both organizations would be best served through a clearer definition of the respective tasks of each organization, globally and regionally, in conformity with the respective mandates given them by their Member States and governing bodies and with the ongoing programmes, globally and regionally; and secondly, the delegates of IOC Member States should brief their respective national delegates to the Governing Council of UNEP on the role and functions of IOC and its major scientific programmes, ocean services and TEMA, so that contradictory or duplicative actions by the UNEP Regional Seas Programme will not arise.

The Delegate of the Netherlands stressed the view that the services rendered by the two organizations to Member States are not as satisfactory as they could be, but the Member States owe it to the Secretariats of IOC and UNEP to find a satisfactory modus vivendi. Since the Memorandum of Understanding between the two Secretariats has not been signed, it would be best if the matter were taken up at a higher level. The delegate further stressed the importance of Member States, of both organizations, understanding the respective roles of IOC and UNEP within the United Nations system so as to co-ordinate their national positions internally. 399

The Delegate of Sweden informed the Assembly of her country's participation in the activities of the Commission, and the contributions in cash and kind that her government has made in the past ten years, mainly through the Swedish International Development Authority (SIDA), to international co-operative marine activities, such as FAO and IMO training courses, and ESCAP work in marine environmental protection. She also stressed the importance of promoting the fullest co-operation between IOC and other international and intergovernmental agencies. Only in this way can the international scientific community rationalize and optimize its resources; this would be highly beneficial for TEMA activities, and should also be a prime factor in undertakings of mutual interest to IOC and UNEP Regional Sea Programmes. She cited other examples of co-operation between these two bodies in the field of marine pollution monitoring and believed that such a partnership could be further applied to studies in, for example, the IOCARIBE and WESTPAC regions. Both IOC and UNEP have established procedures for co-operation with other agencies, and every effort should be made on both sides to ensure a harmonized approach to the identification and solution of environmental problems. She felt that Member States of both organizations have a right to expect close co-operation, but should also insist on the requisite co-ordination. She noted that neither UNEP nor IOC has executive functions and should concentrate on providing the proper basis for the work of those organizations of the United Nations system and outside it that do have executive/operational functions. 400

The Delegate of Poland supported the comments of the Delegates of Brazil, the Netherlands and Sweden. He believed that the discussion had adequately summarized both the problem facing the IOC and the course to take in the future. Yet, he believed that marine pollution was already a serious problem for some countries or would soon become a serious problem for many, and the required research needed to be done, or at least initiated, now. UNEP was, at present, more particularly concerned with pollution on land and in the near-coastal area, but may become more concerned with the open ocean in the future. He believed that, under the present circumstances, co-ordination was required more at the programme level than at the secretariat level. 401

The Representative of UNEP, Dr S. Keckes, expressed his wish to clarify UNEP's position regarding co-operation with the IOC. It is intended that the Commission should be involved--as it has in the past, and is currently--in all aspects of UNEP's programmes that are relevant. He indicated that UNEP had been able to mobilize $3 million from various sources in connection with some 30 projects of mutual interest since 1975. No other organization, except perhaps Unesco, has contributed a comparable amount, and these facts should be kept in mind when discussing co-operation between IOC and UNEP. He explained that UNEP is a programme supported by a small United Nations Secretariat set up by Resolution [illegible] of the United Nations General Assembly in 1972 'to serve as a focal point for environmental action and co-ordination within the United Nations System'. UNEP has a Governing Council to determine policy, to define programme activities and to allocate resources for implementation. In the case 402

of the Regional Seas Programme, 120 states were involved in the 10 regions currently receiving attention. These programmes are set up in response to needs identified by countries, regions and other international bodies. These programmes have attracted $3 million of UNEP Environment Fund resources, and $7 million in supporting Trust Funds. Dr Keckes believed that the present difficulties had arisen from a number of misconceptions and inadequate communication. He felt that the relationship between IOC and UNEP was satisfactory, but there was still room for improvement, bearing in mind the status of UNEP and the fact that it was not a funding agency but a focal point for environmental action and co-ordination with the United Nations system. In explaining why signature by UNEP of the Memorandum of Understanding between IOC and UNEP had been delayed, he stressed the importance that the UNEP Governing Council, at its last session, attached to the development of a System-Wide Medium-Term Environment Programme (SWMTEP) and the corresponding Thematic Joint Programming exercise. As a result of the decisions of the last Governing Council, the Executive Director had decided that the Momorandum of Understanding should be reviewed in the light of the outcome of these two related activities before it could be signed.

403 ▲ The Assembly welcomed the opportunity to discuss this important topic with the Representative of UNEP present. It requested the Chairman or a designated Officer to represent the IOC at the next session of the UNEP Governing Council and bring to the attention thereof the concerns of the Commission about the use of the IOC's regional and technical subsidiary bodies in the implementation of the UNEP Regional Seas Programme, as well as to seek UNEP support for relevant IOC programmes, especially the Global Investigation of Pollution in the Marine Environment, and the Marine Pollution Monitoring Programme. He should recall the invitation to UNEP to support the Working Committee for GIPME.

404 ▲ The Assembly instructed the Secretary to: prepare a report, in all working languages, on ongoing and planned programmes and other activities of the Commission in the field of marine pollution research and monitoring and the protection of the marine environment; to transmit the report to UNEP by mid-January 1983 in order to permit UNEP to distribute the report to the Members of its Governing Council in advance of their meeting; and to distribute the report to IOC Member States at the same time.

405 ▲ The Assembly also instructed the Secretary to pursue the negotiations with a view to the signing of the Memorandum of Understanding.

406 The Assembly adopted Resolutions XII-20 and XII-21.

10.1 INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

407 The Secretary introduced this item. He outlined the content of a Memorandum of Understanding between the IOC and IAEA (document IOC/INF-503), signed in May 1982, following consultations between the Director-General of IAEA and the Chairman of the Commission and the Secretary on 6 February 1981.

408 The Delegate of India reminded the Assembly of the increasing importance of radioactive tracers in marine pollution studies and therefore welcomed the signature of this Memorandum. He also felt that IAEA, through the International Laboratory of Marine Radioactivity in Monaco, could assist in the implementation of certain aspects of TEMA.

409 The Chairman reminded the Assembly that he had strongly encouraged IAEA to become a Member of ICSPRO.

The Assembly warmly welcomed the signing of the Memorandum of Understanding and instructed the Secretary to develop actively with IAEA the possible co-operative projects between the two organizations, especially radiological oceanographic studies in the north-east Atlantic Ocean where radioactive wastes are currently being dumped. 410

10.4 INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)

The Secretary introduced this item. He reported on the progress in consultations with the President and the General Secretary of ICES which had lead to the preparation of the draft of a Memorandum of Understanding between the two organizations, now under consideration by the Assembly. The present draft had not yet been seen by the Bureau of ICES which will next meet in May 1983; according to information provided by the General Secretary of ICES, the signature could take place soon after. 411

The Delegate of the United Kingdom noted that IOC had long recognized ICES as the leading regional body for the North Atlantic region, including the North Sea and the Baltic Sea, and he believed that ICES could contribute significantly to achieving the objectives of the programme on OSLR, as well as in marine pollution research. 412

The Assembly endorsed the general lines of co-operation envisaged in the Memorandum of Understanding. It instructed the Secretary to address special letters of thanks to the outgoing President of ICES, Professor Gotthilf Hempel, and the outgoing General Secretary of ICES, Mr Hans Tambs-Lyche, and letters of welcome to the new President, Professor Warren Wooster, and the new General Secretary, Mr Basil Parrish. 413

10.5 INTERNATIONAL COMMISSION FOR THE SCIENTIFIC EXPLORATION OF THE MEDITERRANEAN SEA (ICSEM)

The Secretary introduced this item. He informed the Assembly of the various personal contacts he had had with the Secretary-General of ICSEM, Commandant J.Y. Cousteau and his assistants, during which he had discussed the concept of a Memorandum of Understanding between the two organizations. The proposal may be put to the next General Session of ICSEM to be held in Cannes in December 1983. The main objective is to expedite the development of joint programmes on matters of common interest to both organizations, including the promotion through ICSEM of global research programmes and ocean services of the IOC in the Mediterranean, the provision of support to developing countries of the region, under TEMA, and to reinforce the Operational Unit for the Mediterranean. 414

Several delegates expressed their approval of these developments. The Delegate of the United Kingdom felt that, apart from the International Bathymetric Chart of the Mediterranean, the IOC had not achieved a great deal of success with its co-operative activities in the Mediterranean; he welcomed the proposed Memorandum of Understanding as a means of promoting a more effective collaboration between IOC and ICSEM in this region. 415

The Delegate of Monaco took note of the fact that a Memorandum proposed by the Secretary of IOC was under study by ICSEM. He believed that the IOC should co-sponsor the VIème Journées d'Etudes sur les pollutions marines en Méditerranée, in Cannes, in December 1982, and should reactivate the Operational Unit, through financial support, since no significant follow-up had been given to Resolution XI-17. 416

417 The Secretary informed the Assembly that provisions had been made in the Programme and Budget for 1984-85 for that purpose, and that he was exploring the possibility of having, in the future, Associate Experts or seconded staff assigned to the Operational Unit.

418 The Assembly took note of the draft Memorandum of Understanding and approved its general tenor. It instructed the Secretary to pursue negotiations for its signature.

11. BRUUN MEMORIAL LECTURES

419 The First Vice-Chairman, Dr N.J. Campbell, introduced the Bruun Memorial Lectures on the afternoon of Wednesday, 10 November, on the theme 'Ocean Science for the Year 2000'.

420 He reminded the Assembly that the study of this theme had begun with the Scientific Review Board, and the Executive Council had then called on the Advisory Bodies to study the expected trends in ocean research up to the year 2000. SCOR took the lead in this exercise, known informally as 'Future Ocean Research' (FORE), and was joined by ACMRR and ECOR. The IOC and Unesco supported the Advisory Bodies in convening a technical consultation, in Villefranche-sur-Mer, France, under the Chairmanship of Professor Eugen Seibold, with Professor Warren Wooster as General Rapporteur. The study was analogous to an earlier one, known as Global Ocean Research, undertaken by SCOR, ACMRR, and ACOMR in 1969 in Ponza, Italy; as the Ponza Report was used by the IOC to prepare the Long-term and Expanded Programme of Oceanic exploration and Research (LEPOR), so the Villefranche report will be used by the ICC to update LEPOR.

421 The themes presented by the four speakers invited to give the 1982 Bruun Memorial Lectures formed the foundation of the FORE report; the speakers and their lectures were as follows:

Future Research on the Ocean Floor and What Lies Beneath It, by Dr M. Talwani (U.S.A.).

Future Research in Physical Oceanography and Climate, by Professor Dr K. Hasselmann (Federal Republic of Germany).

Future Research in Ocean Chemistry, by Professor Dr D. Dyrssen (Sweden).

Future Research in Biological Oceanography, by Dr M.V. Angel (United Kingdom).

422 Dr N.J. Campbell thanked the distinguished scientists for their interesting lectures, and apologized for the lack of time for discussion.

423 Abstracts of these lectures are given in Annex VI. The full text will be published in the IOC Technical Series in due course.

424 Regarding the theme for the Bruun Memorial Lectures at the Thirteenth Session of the Assembly, the Secretary explained that two potential topics had been discussed by the officers: regional activities; and philosophy and approach to the development of national marine science capabilities. He also noted that the Thirteenth Session of the Assembly would coincide with the twenty-fifth anniversary of the Commission and that special measures could be taken to commemorate the event, including plans for the Bruun Memorial Lectures.

The Delegate of the Federal Republic of Germany, drawing on his long experience with the Commission, suggested that it would be appropriate to consider interdisciplinary topics that would be interesting and challenging subjects for discussion, even those going beyond the strict limits of oceanography. He suggested the following possible topics: ocean productivity, polar seas, coastal processes, benthic boundary layer, ocean-atmosphere interaction, and ocean uses or ocean science and society. 425

The Assembly endorsed the idea of commemorating the twenty-fifth anniversary of the Commission and instructed the Secretary, following a meeting of the newly elected IOC officers, to report on this matter to the Seventeenth Session of the Executive Council. 426

The Delegate of the U.S.A. proposed that the IOC consider an award at each Assembly to a marine scientist who had made an outstanding contribution to the scientific work of the Commission. He suggested this award be in the form of a medal, and that the United States of America would be prepared to fund, out of its contribution to the Trust Fund, the design and striking of the first such medal. He proposed that the Officers develop draft criteria and procedures for such an award, and to present these for consideration and approval by the Executive Council at its next Session. 427

The Chairman noted that the presentation of the first IOC medal should be considered within the context of a special event marking the first twenty-five years of the IOC. 428

12. ELECTIONS

The Chairman introduced this item. He drew the attention of the Assembly to Draft Resolution 21 rev. 429

The Delegate of Peru, during the Plenary on Wednesday 10 November 1982 informed the Assembly of his intention to submit, with the approval of a number of other delegations, a proposal, in the form of a Draft Resolution, to suspend Rule of Procedure No. 17. He outlined the rationale of the proposal; his arguments were restated when he introduced Draft Resolution 21 rev. in Plenary on Friday 12 November 1982, and are given in the following paragraph. 430

The Delegate of Peru informed the Assembly that consultations among a substantial number of Member States on various occasions, particularly during the United Nations Conference on the Law of the Sea, had revealed considerable support for the idea of the oceans as a unity, and that the IOC was becoming an increasingly important organization as the new ocean regime developed; also, co-operation among Member States was increasing considerably. He believed that the Commission was in a phase of transition in which it was preparing itself to assume much greater and wider responsibilities. He felt, therefore, that it was vital, while crossing this very important bridge, to maintain its stability and to be able to build on the sure foundation already laid down by its present Chairman and Vice-Chairmen. He stressed the good relationship that now exists between the Chairman and the Director-General of Unesco, which is most important for the work of the Commission. He therefore believed that he would be speaking for a large number of Member States if he proposed that, under these special circumstances, the Commission make it possible for the present Officers to be in a position to be re-elected and thus continue to serve the Commission at least until the next Assembly, by which time the way ahead, under the new ocean regime and, conceivably, under the Convention on the Law of the Sea in force, would be clearer, allowing the Commission to 431

resume its normal modus operandi. He therefore proposed, as a special case and without allowing it to stand as a precedent; the suspension of IOC Rule of Procedure No. 17 (on the ineligibility of an Officer of the Commission for re-election for more than two successive terms of office). In doing so, he recognized its high relevance to the electoral process, but felt that the Rules of Procedure had been laid down to facilitate the work of the Commission, and should, therefore, not prevent the achievement of that objective.

432 The Delegate of Venezuela stated that he supported Draft Resolution 21 rev., and the idea of continuity in the work of the Commission that it sought to promote. He did not believe that any legal argument could be adduced against it, since Article 58 of the Statutes allows any Rule of Procedure to be suspended by a simple majority of the Member States of the Commission; this was a prerogative of any sovereign body such as the Assembly. Such a prerogative provided for greater flexibility in the conduct of affairs. It would not, he said, impede open discussion of the chairmanship. He believed that a majority of the Member States welcomed the proposal and he hoped that the Assembly would be unanimous in supporting it, as was the wish of the Group of 77.

433 The Delegate of the United Kingdom reminded the Assembly that there were other considerations to be taken into account which point to the opposite conclusion to that advanced in Draft Resolution 21 rev. He emphasized that a precedent would inevitably be set, and unless the present circumstances were truly exceptional, the principles on which Rule of Procedure No. 17 is based would be at risk. Referring to Draft Resolution 21 rev., he said that continuity of good relations with Unesco should be the permanent aim of the Commission, transcending personalities, and that, in any event, continuity is specifically facilitated by Rule of Procedure No. 36, which enabled the immediate past chairman to serve until the next Assembly in an ex officio capacity. Again, the impact on IOC of the new ocean regime would not happen suddenly but will be with the Commission for some years to come. Perhaps Rule of Procedure No. 17 was too restrictive, but the time to examine that was after, not before, elections, when principles were liable to be confused with expediency. For those reasons he did not believe that present circumstances were sufficiently exceptional to justify suspension of Rule of Procedure No. 17, and he did believe that it would therefore be unwise to proceed in this way.

434 The Delegate of Canada asked for a suspension of the Session until it could be determined from the record whether the Delegate of Peru had asked for a secret vote on Draft Resolution 21 rev., since the Assembly had agreed by consensus to receive the Draft Resolution and to postpone voting accordingly, on the basis of this provision. This motion was opposed by several Delegates and defeated by a significant majority when put to a vote.

435 The Chairman therefore called for a vote on the proposal to suspend Rule of Procedure No. 17, embodied in Draft Resolution 21 rev., which required a simple majority (55) of all the Member States of the Commission (108), under Rule of Procedure No. 58.

436 The proposal was not carried, there being only 42 votes in favour, 19 votes against, 14 abstentions, and 37 Member States absent at the time.

437 The Assembly also considered a proposal to enlarge the membership of the Executive Council (document IOC-XII/8 Annex IV). This proposal, based on a wider interpretation of Article 5 of the IOC's Statutes, was generally thought likely to benefit the work of the Commission by allowing a somewhat improved geographical representation on the Executive Council.

The Delegate of the USSR drew attention to the fact that the dispositions of Articles 4 and 5 of the Statutes, and of Rule of Procedure No. 18 of the Commission, indicate that the total number of Member States in the Executive Council should not exceed one quarter of the Member States of IOC, and that the IOC has hitherto followed this concept in practice. He felt that a too liberal interpretation of the dispositions of the above-mentioned Statutes and Rule of Procedure, as proposed in document IOC-XII/8 Annex 19, can only give cause for concern. 438

The Assembly adopted Resolution XII-22. 439

The Assembly instructed the Secretary to amend the IOC Manual accordingly. 440

In the Plenary of 17 November 1982, the Chairman of the Nominations Committee informed the Assembly that all nominations received had been found to be in order. 441

Election of Officers

There were two candidates for Chairman: Dr N.J. Campbell of Canada, and Professor I. Ronquillo of the Philippines. The Assembly agreed that since both were very well known to the Commission, no introductory speeches were required. 442

Professor Ronquillo was elected Chairman. 443

There was only one candidate for the post of First Vice-Chairman, Mlle M.A. Martin-Sané, who was therefore elected by acclamation. 444

There were four candidates for Second Vice-Chairman: Professor A.R. Bayoumi (Egypt); Dr J.A. Galavis-Seidel (Venezuela); Professor J.O. Strömberg (Sweden); Professor K. Voigt (German Democratic Republic). 445

Prior to the voting, Dr Galavis and Professor Strömberg withdrew their candidatures. 446

The Assembly agreed that no introductory speeches were required, since the two remaining candidates were well known to the Assembly. 447

Professor A.R. Bayoumi of Egypt was elected Second Vice-Chairman. 448

Dr J.A. Galavis and Professor K. Voigt were candidates for the post of Third Vice-Chairman. Professor Voigt, however, withdrew his candidature prior to the election, and Dr Galavis was elected Third Vice-Chairman, by acclamation. 449

Professor J.O. Strömberg and Professor K. Voigt were candidates for the post of Fourth Vice-Chairman. Professor Stromberg withdrew his candidature. 450

Professor Voigt, being the only candidate for Fourth Vice-Chairman, was elected by acclamation. 451

Elections for seats on the Executive Council

The following Member States were elected to the Executive Council: Algeria, Angola, Argentina, Australia, Brazil, Canada, China, Costa Rica, the Federal Republic of Germany, India, Indonesia, Iraq, Italy, Japan, Jordan, Kenya, Mexico, Netherlands, Nigeria, Peru, Senegal, Spain, Sweden, Turkey, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, the United States of America. 452

453 A full list of State-member representatives on the Executive Council is given in Annex IV.

454 The method of vote counting was discussed, and the Assembly agreed that, at the present Session, the voting slips should be checked by the Secretary in the presence of two IOC Assistant Secretaries and five delegates (Argentina, Libya, Nigeria, Turkey and United Kingdom agreed to serve as witnesses), to determine their validity and the conformity with the Rules of Procedure, in full view of the Assembly. The votes were then to be read out by the Secretary to the seven witnesses who should record them and count them; the counts were then to be checked for agreement. The Secretary should then announce the results. This was the procedure followed.

455 The Delegate of Canada suggested, however, that the procedure adopted for elections could be improved. He felt that either the count should be made in public, with all Member States present and participating in recording the count, or the count should be made in a separate room by the Secretariat, with a few Member State witnesses, to allow the Assembly to continue its work, the count being announced at a prescribed time in Plenary.

456 ▲ The Assembly instructed the Secretary to present a proposal for an effective system of vote-counting to the Executive Council for its consideration and approval, and eventual recommendation to the Assembly.

13. DATES AND PLACES OF THE THIRTEENTH SESSION OF THE ASSEMBLY AND OF THE SEVENTEENTH AND EIGHTEENTH SESSIONS OF THE EXECUTIVE COUNCIL

457 The Secretary introduced this item. He outlined document IOC-XII/8 Annex 17 Add. (A Proposal for Changing the Time of Year at which the IOC Assembly is Convened) and reminded the Assembly that it had already adopted Resolution XII-17 on the frequency of Executive Council sessions. He noted that, with the exception of the Unesco General Conference, the Assembly was the largest meeting held at Unesco. He drew attention to the difficulties that the Secretariat had encountered with the present schedule in which the Assembly takes place in October/November, at about which time there is normally a session of the Unesco Executive Board and preparation of the Unesco Programme Activity Details (PAD) and the Programme and Budget (C/5 document) is initiated. He explained that a careful study by the Secretariat indicated that better services could be offered to the Assembly if it were held early in February.

458 Should this suggestion be accepted, there would be a relatively long period of time between the Twelfth Session of the Assembly and the Seventeenth Session of the Executive Council, and the Secretary suggested that a meeting of the Officers of the Commission in 1983 would be a useful measure to ensure the smooth running of the Commission's business.

459 Several delegates asked for clarification of the impact that such a decision would have on the working methods of the Commission, particularly as they relate to the requirements for the preparation of IOC contributions to the documentation of the Unesco General Conference.

460 ■ The Assembly took the view that the possibility for the Executive Council sessions to be held away from Paris should be maintained, provided that prospective host countries are able to provide the required logistical support and that no additional cost falls on the Commission.

The Assembly agreed that the Seventeenth Session of the Executive Council should take place during February 1984 in Paris, unless an appropriate offer and the required support was received from a Member State to host the Session. The Eighteenth Session of the Executive Council and the Thirteenth Session of the Assembly will be held in Paris in February 1985. 461

The Delegate of the United States drew attention to Rule of Procedure No.11 which required documentation for an Executive Council or an Assembly to reach Member States no later than two months prior to the opening thereof. He suggested that the change in timing might result in a conflict between the preparation of documentation for IOC meetings and similar preparations for the Unesco General Conference. He also noted that the volume of documentation appeared to be increasing and asked the Secretary to take these concerns into account when determining the dates of meetings. 462

The Delegate of Australia, referring to the importance of timely availability of documentation, emphasized that the change from November to February for meetings of the Assembly and Executive Council, gave even greater importance to the provisions of Rule of Procedure No.11, since the months of December and January are the major annual holiday periods of some Member States. 463

The Secretary recalled that the Secretariat study reported in document IOC-XII/8 Annex 17 (Frequency of Executive Council Sessions) showed that the number of documents prepared specifically for sessions of the IOC governing bodies since 1978 had shown a tendency to diminish. Also, he stressed the fact that the proposal adopted by the Assembly through Resolution XII-17 did not exclude an evaluation of the proposal by the Assembly in the light of the experience gained in its application, for which purpose he offered to report to the Seventeenth Session of the Executive Council or the Thirteenth Session of the Assembly. 464

The Assembly noted that the timing of the meetings of subsidiary bodies would have to be adjusted to allow sufficient time for the preparation of reports for consideration by the Executive Council or Assembly. 465

14. ADOPTION OF THE SUMMARY REPORT

The Chairman introduced this item. Since the reports of the ad hoc sessional technical committees had been approved in the respective committees and formed the basis of the Summary Report of the Assembly, the approval of the latter was greatly facilitated. Only a few significant corrections were necessary. 466

The Assembly adopted the Summary Report and twenty-two resolutions. 467

15. CLOSURE

The Chairman introduced this item. First, he reminded the Assembly that Professor Hans Ulrich Roll, Head of the Delegation of the Federal Republic of Germany, and a member of that Delegation for the last eighteen years, would be retiring from this position after the present Assembly. He recalled the many contributions that Professor Roll had made to the work of the Commission, particularly via his story of the Commission printed in IOC Technical Series No.20. 468

The Chairman then presented Professor and Mrs Roll with gifts from the delegates to the Assembly. 469

470 Professor Roll said that the eighteen years of his life that he had given to the Commission had been the most fruitful of his life, and he would continue to have a close interest in the progress of the IOC.

471 Professor Roll reminded the Assembly that Dr Ayala was the longest-serving Chairman of the Commission, who had established excellent relations with the Director-General of Unesco and who had guided the Commission through a difficult period of rapid change promoted mainly by the development of the United Nations Convention on the Law of the Sea. Professor Roll recalled that the President and several Ministers of the Government of Mexico had honoured the Commission by their presence during the Eleventh Session of the IOC's Executive Council in Mexico; this, he stressed, was a tribute to Dr Ayala's contribution to the work of the IOC. On behalf of the Assembly, Professor Roll expressed the IOC's appreciation to the Chairman.

472 Many delegates joined in this praise of the outgoing Chairman.

473 The Secretary added his own and his staff's appreciation of the Chairman's work. He pointed out the fact that Dr Ayala had measurably increased the IOC's prestige and had resolved numerous problems confronting it.

474 The Chairman thanked the Assembly and the Secretary for their expressions of appreciation. He gave special thanks to the Director-General of Unesco and to the Assistant Director-General for Science, and expressed his appreciation of the work of the Secretary and the staff, as well as the Secretariat conference staff. Dr Ayala assured the delegates that he would continue to follow closely the work of the Commission and to serve its Member States.

475 The Chairman closed the Twelfth Session of the IOC Assembly at 6 p.m. on Friday 19 November 1982.

ANNEX I

AGENDA

1. OPENING

2. ADMINISTRATIVE ARRANGEMENTS

- 2.1 ADOPTION OF THE AGENDA
- 2.2 DESIGNATION OF THE RAPPORTEUR
- 2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION
- 2.4 CONSTITUTION OF SESSIONAL COMMITTEES

3. ADOPTION OF THE TRIENNIAL REPORT OF THE COMMISSION

4. OCEAN SCIENCES

- 4.1 OCEAN SCIENCE FOR THE YEAR 2000
- 4.2 OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR)
- 4.3 OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR)
- 4.4 OCEAN MAPPING AND GENERAL BATHYMETRIC CHART OF THE OCEANS (GEBCO)
- 4.5 OCEAN DYNAMICS AND CLIMATE
  - 4.5.1 Large-scale Ocean Experiments
  - 4.5.2 Scientific Basis for Ocean Monitoring
  - 4.5.3 Programme Implementation
- 4.6 MARINE POLLUTION RESEARCH AND MONITORING
  - 4.6.1 Plan of Action for the Implementation of the Global Investigation of Pollution in the Marine Environment (GIPME)
  - 4.6.2 Development of a Marine Pollution Monitoring System (MARPOLMON)
  - 4.6.3 Health of the Oceans

5. OCEAN SERVICES

- 5.1 INTEGRATED GLOBAL OCEAN SERVICES SYSTEM (IGOSS)
  - 5.1.1 State of Implementation
  - 5.1.2 Regional Implementation
  - 5.1.3 Use of Drifting Buoys for Oceanographic and Other Purposes
- 5.2 INTERNATIONAL OCEANOGRAPHIC DATA EXCHANGE AND MARINE INFORMATION MANAGEMENT
- 5.3 STANDARDIZATION OF OCEANOGRAPHIC PROCEDURES, SYMBOLS, UNITS AND NOMENCLATURE
- 5.4 TSUNAMI WARNING SYSTEM IN THE PACIFIC

6. TRAINING, EDUCATION AND MUTUAL ASSISTANCE IN THE MARINE SCIENCES (TEMA)

- 6.1 COMPREHENSIVE PLAN FOR A MAJOR PROGRAMME OF ASSISTANCE TO ENHANCE THE MARINE SCIENCE CAPABILITIES OF DEVELOPING COUNTRIES
- 6.2 TEMA COMPONENTS OF IOC PROGRAMMES

7. IMPLICATIONS FOR THE IOC OF DEVELOPMENTS IN INTERNATIONAL AFFAIRS

- 7.1 ELEVENTH SESSION OF THE UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA
- 7.2 AD HOC TASK TEAM TO STUDY THE DRAFT CONVENTION ON THE LAW OF THE SEA AND ANY FUTURE TEXT DEVELOPED BY UNCLOS, AND THE IMPLICATIONS FOR THE COMMISSION
- 7.3 UPDATING OF THE LONG-TERM AND EXPANDED PROGRAMME OF OCEANIC EXPLORATION AND RESEARCH (LEPOR)
- 7.4 INTERNATIONAL CONFERENCE ON OCEAN DATA ACQUISITION SYSTEMS (ODAS)

8. MEDIUM-TERM PLAN, PROGRAMME AND BUDGET

8.1 UNESCO MEDIUM-TERM PLAN (1984-1989)
8.2 IOC PROGRAMME AND BUDGET FOR 1984-1985
8.3 PROGRAMME AND BUDGET OF THE UNESCO DIVISION OF MARINE SCIENCES

9. STRUCTURE AND FUNCTIONING OF THE COMMISSION AND ITS REGIONAL SUBSIDIARY BODIES

9.1 NEW MECHANISMS FOR CO-OPERATION
9.1.1 Concept of IOC Regional Sub-Commissions
9.1.2 Machinery for the Implementation of the Programmes of Ocean Science in Relation to Living Resources and of Ocean Science in Relation to Non-Living Resources
9.2 REGIONAL SUBSIDIARY BODIES
9.2.1 IOC Association for the Caribbean and Adjacent Regions (IOCARIBE)
9.2.2 Programme Group for the Western Pacific (WESTPAC) and Joint Bodies
9.2.3 Programme Group for the North and Central Western Indian Ocean (CINCWIO)
9.2.4 Programme Group for the Southern Oceans (SOC)
9.2.5 Proposed Activities for Western Africa
9.3 FREQUENCY AND TIMING OF EXECUTIVE COUNCIL SESSIONS

10. AGREEMENTS WITH OTHER ORGANIZATIONS OF THE UNITED NATIONS SYSTEM AND OTHER BODIES

10.1 INTER-SECRETARIAT COMMITTEE ON SCIENTIFIC PROGRAMMES RELATING TO OCEANOGRAPHY (ICSPRO)
10.2 UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
10.3 INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
10.4 INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)
10.5 INTERNATIONAL COMMISSION FOR THE SCIENTIFIC EXPLORATION OF THE MEDITERRANEAN SEA (ICSEM)

11. ANTON BRUUN MEMORIAL LECTURES

12. ELECTIONS

12.1 ELECTION OF THE OFFICERS OF THE COMMISSION
12.2 ELECTION OF THE MEMBERS OF THE EXECUTIVE COUNCIL

13. DATES AND PLACES OF THE THIRTEENTH SESSION OF THE ASSEMBLY AND OF THE SEVENTEENTH AND EIGHTEENTH SESSIONS OF THE EXECUTIVE COUNCIL

14. ADOPTION OF THE SUMMARY REPORT

15. CLOSURE

ANNEX II

ADOPTED RESOLUTIONS

No.	Agenda item	Title
XII-1	4.2	Ocean Science in Relation to Living Resources (OSLR)
XII-2	4.3	Ocean Science in Relation to Non-Living Resources (OSNLR)
XII-3	4.4	General Bathymetric Chart of the Oceans (GEBCO)
XII-4	4.5	Ocean Dynamics and Climate
XII-5	5.1.3	Drifting Buoys
XII-6	5.2	International Oceanographic Data Exchange
XII-7	5.4	Tsunami Warning System in the Pacific
XII-8	6.1	A Comprehensive Plan for a Major Assistance Programme to Enhance the Marine Science Capabilities of Developing Countries
XII-9	7.4	Second Preparatory Conference of Governmental Experts to Formulate a Draft Convention on the Legal Status of Ocean Data Acquisition Systems (ODAS)
XII-10	8.1	Unesco Medium-Term Plan
XII-11	8.2	IOC Programme and Budget 1984-1985
XII-12	8.2	Funds-in-Trust Contributions to the Commission
XII-13	8.3	Programme and Budget of the Unesco Division of Marine Sciences
XII-14	9.1.1	An IOC Programme Group for the Central Indian Ocean (PG/CINDIO)
XII-15	9.2.1	Support for the IOC Secretariat for IOCARIBE
XII-16	9.2.1	Establishment of an IOC Sub-Commission for the Caribbean and Adjacent Regions
XII-17	9.3	Frequency of Executive Council Sessions
XII-18	10	IOC Co-sponsorship of GESAMP
XII-19	10	Mabahiss--John Murray International Symposium, Alexandria, September 1983
XII-20	10	Co-operation between IOC and UNEP in Marine Pollution Research and Monitoring
XII-21	10	Relationship between the IOC and UNEP
XII-22	12	Membership of the Executive Council

Resolution XII-1

OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR)

The Intergovernmental Oceanographic Commission,

A

Recalling Resolution XI-17 approving the development by the Commission of a Programme of Ocean Science in Relation to Living Resources (OSLR),

Expresses its appreciation to SCOR and ACMRR for the report of their joint Working Group No. 67 (document IOC-XII/8 Annex 1a) which was submitted to the Assembly in response to the Commission's request for advice on this programme;

Adopts OSLR as a new scientific programme of the Commission.

B

Agreeing with the SCOR view that the first major objective of the Commission's OSLR Programme should be to gain a better understanding of the effect of environmental conditions on recruitment of fish stocks, this being one of the central and long-standing, but still largely unresolved, problems in marine science in relation to living resources,

Noting that progress towards this objective would be of direct assistance to Member States in their task of achieving the best management of fish resources and in support of FAO activities to that effect,

Acknowledging that the multi-disciplinary research involved is particularly demanding logistically and calls for the concerted application of a wide range of scientific skills, together with the necessary facilities, at sea and ashore, on a long-term basis,

Agreeing also with the conclusion of SCOR/ACMRR Working Group No. 67 that a promising approach would therefore be to develop an international programme comprising a network of investigations into the relevant aspect of the quantitative ecology of selected fish species, co-ordinated in space and time and using similar techniques (hereafter called the International Recruitment Project, IREP),

Noting also that one possible form that this programme could take is that described in the report of the SCOR/ACMRR Working Group No. 67 as IREX (International Recruitment Experiment),

Being aware that much consultation and detailed planning will be required before such an international programme can be undertaken,

Invites the FAO to co-sponsor the OSLR Programme and the International Recruitment Project in particular;

Establishes a Guiding Group of Experts on the OSLR Programme, with the terms of reference contained in the annex attached to this resolution;

Requests the group to report on progress to the Executive Council at its Seventeenth Session;

Accepts with appreciation the offer from Canada to host a workshop on the future planning of the IREP;

Accepts also with appreciation the offer from the Unesco Division of Marine Sciences to sponsor a working group to examine the special problems of high-diversity ecosystems in the context of the OSLR Programme.

Annex to Resolution XII-1

TERMS OF REFERENCE OF THE GUIDING GROUP OF EXPERTS ON THE PROGRAMME OF OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR)

1. To plan further the development of the OSLR Programme, and in particular the International Recruitment Project (IREP), along the lines of the IREX proposal or in other ways, paying particular attention to methodology, techniques and logistics.

2. To provide scientific and technical advice to the IOC regional subsidiary bodies involved in the implementation of regional components of the OSLR Programme.

3. To seek the co-operation of SCOR, IABO, appropriate regional bodies (ICES, CPPS and regional fishery bodies of FAO, in particular) and national institutions.

4. To liaise with IOC subsidiary bodies (e.g. Joint SCOR/IOC CCCO, Working Committee for IGOSS and Working Committee on IODE) that might be able to assist in one or other aspects of the OSLR Programme, particularly IREP.

5. To co-operate with the Unesco Division of Marine Sciences on the special problems of high-diversity ecosystems in the context of OSLR.

6. To consider how best to ensure the participation of developing countries, in the OSLR Programme, by including TEMA components therein.

Resolution XII-2

OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR)

The Intergovernmental Oceanographic Commission,

A

Recalling Resolutions EC-XIV. 19 and EC-XV. 1 regarding a programme on Ocean Science in Relation to Non-Living Resources (OSNLR),

Having received with appreciation the report of SCOR on a Proposal on a Programme of Ocean Science in Relation to Non-Living Resources (document IOC-XII/8 Annex 2a) prepared with the assistance of the IUGS Commission for Marine Geology (CMG) and the Third International Workshop on Marine Geoscience (Heidelberg, July 1982) and submitted in response to the IOC request for advice on this programme,

Expresses its thanks to SCOR and the CMG (of IUGS), as well as to the ad hoc Group of Experts convened in the framework of the Third International Workshop on Marine Geoscience for their contribution to the formulation of the OSNLR Programme;

Adopts OSNLR as a new scientific programme of the Commission.

B

Recalling the endorsement by the Executive Council in Resolution EC-XIV. 19 of collaboration between the IOC and the United Nations in the OSNLR Programme,

Noting that in preparation for OSNLR such collaboration has been initiated between the IOC and the Ocean Economics and Technology Branch (OETB) of the United Nations Department of International Economic and Social Affairs in the field of data on non-living resources, through the IOC Working Committee on International Oceanographic Data Exchange (IODE),

Noting further that a number of ongoing and planned activities of the United Nations (OETB) are directly relevant to components of the OSNLR Programme,

Invites the United Nations to co-sponsor the programme;

Requests the United Nations (OETB) to report to the Economic and Social Council on this programme;

Accepts with appreciation the offer of the Unesco Division of Marine Sciences to co-operate in specific components of the OSNLR Programme;

Establishes a Guiding Group of Experts on the Implementation of the OSNLR Programme, with terms of reference contained in the annex to this resolution;

Requests the group to report on progress to the Executive Council at its Seventeenth Session;

Requests the regional subsidiary bodies of the Commission to examine the OSNLR Programme with a view to identifying relevant components and to take measures for its implementation.

Annex to Resolution XII-2

TERMS OF REFERENCE OF THE GUIDING GROUP OF EXPERTS ON IMPLEMENTATION OF THE PROGRAMME OF OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR)

1. To plan the further development of the OSNLR Programme, paying particular attention to methodological, technological and logistic aspects.

2. To provide scientific and technical advice to IOC regional subsidiary bodies involved in implementation of regional components of OSNLR.

3. To seek the co-operation of SCOR, CMG and the Unesco Division of Marine Sciences, as well as appropriate international regional bodies.

4. To liaise with IOC subsidiary bodies (e.g. the Working Committee on IODE) that might be able to contribute to various components of the OSNLR Programme.

5. To consider how best to ensure the participation of developing countries, by including TEMA components in the OSNLR Programme.

Resolution XII-3

GENERAL BATHYMETRIC CHART OF THE OCEANS (GEBCO)

The Intergovernmental Oceanographic Commission,

Recognizing that the GEBCO (5th Edition) represents a most valuable asset and resource,

Recognizing further that its impact on the marine community needs to be evaluated closely and that ways and means of capitalizing on the series will need to be devised,

Noting that there is a large number of further tasks for which a guiding committee will continue to be needed,

Expresses its great appreciation to the Government of Canada for the large amount of work and funding it has put into this considerable undertaking;

Also expresses its thanks to all the institutions and individuals worldwide who have contributed to the successful conclusion of this primary task;

Decides to continue the Joint IOC-IHO Guiding Committee for GEBCO, with the revised terms of reference contained in the annex to this resolution which have already been approved by the XIIth International Hydrographic Conference in April 1982.

Annex to Resolution XII-3

TERMS OF REFERENCE

The Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans (GEBCO) shall:

1. Identify the needs of the various users of a world series of bathymetric charts, study the means whereby the needs can be met, and take all necessary action towards this end;

2. Draw up administrative plans for, and actively pursue, the formation and continued operation of a full-time GEBCO Ocean Mapping Unit:

   (i) to provide advice and facilities for the compilation of bathymetry and other oceanographic parameters for the GEBCO series of charts and overlays (overprints);

   (ii) to provide education and training facilities identified by the GEBCO Sub-Committee on Technical Problems relating to the proposed Convention on the Law of the Sea;

3. After analysing the impact of the GEBCO 5th Edition on the world community over a number of years after issue of full world cover, draw up plans for a next edition which should reflect the new technologies and data available, and, subsequently, draw up specifications and a timetable for the production of a 6th Edition of GEBCO;

4. Investigate and develop new logistic and financial arrangements necessary for the production of a 6th Edition of GEBCO;

5. Advise the International Hydrographic Organization (in its capacity as the World Data Centre for Bathymetry) on matters connected with the collection and exchange of high quality bathymetric data, including both the compilation and updating of the 1:1 million plotting sheets and the development of automatic data generating, archiving and retrieval, soliciting the advice and assistance of the IOC Working Committee on International Oceanographic Data Exchange (IODE), as necessary;

6. Identify new sources of data with the object of ensuring that maximum available data are submitted to the World Data Centre for Bathymetry;

7. Recommend and develop measures for optimum publicity, distribution and sales of charts produced under the aegis of the Guiding Committee;

8. Maintain, as necessary, advisory sub-committees on:

   (i) geographical names and nomenclature of ocean-bottom features;

   (ii) digital bathymetry;

   (iii) technical problems relating to the proposed Convention on the Law of the Sea;

   and create others as required from time to time;

9. Be prepared to act, when requested, as the representative subsidiary body of the IOC and IHO for the co-sponsorship, with other appropriate bodies, of disciplinary groups for the preparation of overlays (or overprints) of various oceanographic parameters (biological, physical and chemical as well as geological/geophysical);

10. Collaborate, when requested, with regional bodies affiliated to IOC and/or IHO in the preparation of bathymetric charts and overlays (overprints) at scales suitable for regional projects e. g. the International Bathymetric Chart of the Mediterranean (IBCM);

11. Provide advice on ocean mapping, as requested by intergovernmental and non-governmental organizations.

Resolution XII-4

OCEAN DYNAMICS AND CLIMATE

The Intergovernmental Oceanographic Commission,

A

Recalling Resolutions XI-3 and EC-XIV. 9,

Noting that several countries (see annex to this resolution) have put forward information concerning programmes related to ocean dynamics and climate,

Recognizing the need for the co-ordination of national projects and programmes, in order to achieve the major objectives of the World Climate Research Programme (WCRP) in the most effective manner,

Recognizing further that many countries are already carrying out experiments and programmes connected with, or relevant to, the study of the role of selected key areas of the World Ocean in short-term climatic variations,

Having reviewed the research proposals for Large-Scale Oceanographic Experiments developed by the Joint Committee in co-operation with the Joint Scientific Committee (JSC) for the WCRP, to study: the World Ocean Circulation, the Interannual Variability of the Tropical Oceans and Global Atmosphere, and the Flux of Heat through the Ocean Surface and Heat Transport by the Ocean,

Accepts these proposals as the nucleus of the Commission's research programme on the role of the ocean in climate change and variability;

Recommends that the Joint SCOR/IOC Committee on Climatic Changes and the Ocean prepare in 1983, in consultation with the JSC, a comprehensive international programme for ocean monitoring for the purposes of the WCRP, giving priority to the co-ordination of existing or imminently scheduled programmes and projects, for consideration by the IOC Executive Council and the WMO Executive Committee early in 1984.

B

Noting the tentative time frame for the WCRP, which includes an intensive five-year observational period starting before the end of the 1980s,

Requests the Joint SCOR/IOC Committee, in co-operation with the JSC, as appropriate, to undertake the design of the large-scale experiments and to promote precursor studies;

Requests the Chairman of the Joint SCOR/IOC Committee, together with the President of SCOR, and the Chairman of IOC, with the collaboration of the Secretary of IOC, to prepare a detailed study of the international mechanism required for the implementation of the proposed large-scale oceanographic experiments, for submission to the Executive Council at its Seventeenth Session.

Annex to Resolution XII-4

PROGRAMMES RELATED TO OCEAN DYNAMICS AND CLIMATE

France	FOCAL	Français Océan et Climat de l'Atlantique Equatorial
	TOPOGULF	Effects of the Mid-Atlantic Ridge upon the General Circulation and its Transients at Mid-Latitudes
	SINODE	Surface Indian Ocean Dynamic Experiment
Germany, Fed. Rep. of	Warm Water Sphere	
Japan	OMLET	Ocean Mixed Layer Experiment
	OHTEX	Ocean Heat Transport Experiment
	HAIKU	Heat Advection Investigation in the East Kuroshio
Portugal	CLIVA	Climate and Variability of the N. E. Atlantic
USSR, Poland, Bulgaria, German Democratic Republic	SECTIONS	Energetically Active Zones of the Ocean (EAZO) and Climate Variability
United Kingdom	Exploratory Monitoring Series	
United States of America	EPOCS	Equatorial Pacific Ocean Climate Studies
	STACS	Subtropical Atlantic Climate Studies
	PEQUOD	Pacific Equatorial Ocean Dynamics
	SEQUAL	Seasonal Equatorial Atlantic Experiment
	TTO	Transit Tracers in the Ocean
	OACIS	Ocean Atmosphere Climate Interaction Studies
	ENSO	An Ocean-Atmosphere Interaction Study: El Niño and the Southern Oscillation
	TROPIC HEAT	Tropical Pacific Upper Ocean Heat and Mass Budgets
	El Niño Rapid Response	
Japan, United States of America	TRANSPAC	North Pacific Ocean Monitoring (XBT) for Climate Research
Peru, Chile, Colombia, Ecuador	ERFEN	Estudio Regional del Fenómeno El Niño

Other countries such as China, Canada and Australia are conducting climate-related programmes but do not attach specific project names to those activities, such as those above.

Resolution XII-5

DRIFTING BUOYS

The Intergovernmental Oceanographic Commission,

Recalling Resolutions EC-XI.12, XI-19 and EC-XII.10, and WMO resolutions 3(EC-XXXII) and 8(EC-XXXIII) regarding co-operation between these international organizations,

Having reviewed the Summary Reports of the First and Second Joint IOC/SCOR/ECOR Informal Consultative Meetings on Drifting Buoy Programmes (documents IOC/INF-455 and 501), including a proposal for a joint IOC-WMO co-ordinating mechanism for the operation of drifting buoys,

Expresses its appreciation to SCOR and ECOR for their reports on oceanographic drifting buoys;

Invites WMO to join IOC in requesting the Joint IOC/WMO Working Committee for IGOSS to prepare a report on an appropriate cost-effective mechanism for co-ordinating oceanographic/meteorological drifting-buoy activities, for consideration by the IOC Executive Council at its Seventeenth Session and by the WMO Executive Committee at its Thirty-Fifth Session;

Urges IOC Member States and the WMO to participate actively in establishing a wide network of drifting buoys to meet oceanographic and meteorological requirements, both operational and scientific.

Resolution XII-6

INTERNATIONAL OCEANOGRAPHIC DATA EXCHANGE

The Intergovernmental Oceanographic Commission,

Recalling Resolutions XI-20, XI-21 and XI-22,

Noting that the Tenth Session of the Working Committee on International Oceanographic Data Exchange reviewed progress in its field of activity and formulated plans for its further development which were approved by the IOC Executive Council at its Fifteenth Session,

Being concerned at the slight decrease observed in submission of data and documents to the World Data Centres (WDCs) (Oceanography), and the tendency of Member States to delay submission of data for three to four years instead of the maximum one-year delay laid down in the IOC Manual on International Oceanographic Data Exchange (IODE) (IOC Manuals and Guides No. 9),

Expresses, however, its appreciation to several international bodies for their effective co-operation in data and information exchange, especially the World Meteorological Organization (WMO) with respect to oceanographic data management arrangements for the FGGE Operational Year; the WMO and ICSU with respect to the World Climate Programme; the International Council for the Exploration of the Sea and its Service Hydrographique with respect to its assumption of the responsibilities of a Responsible National Oceanographic Data Centre (RNODC) - Format and in promoting the use among its Member States of IODE General Format 3 (GF-3); and the United Nations (OETB), with respect to exchange of data on non-renewable resources (minerals);

Stresses the importance of avoiding duplication of effort by Member States that would arise from the establishment of several independent systems of data collection and exchange in closely related fields;

Calls upon Member States:

to submit to the Secretariat, on a more regular and timely basis, information on Declared National Programmes/National Oceanographic Programmes;

to submit data to the WDCs (Oceanography) in accordance with the provision of the IOC Manual on International Oceanographic Data Exchange (IOC Manuals and Guides No. 9), in order to accelerate the data flow into the IODE network;

to use IODE General Format 3 (GF-3) in their National Oceanographic Data Centres (NODCs) for exchange of data;

to submit data file descriptions of their data holdings, through NODCs or Designated National Agencies (DNAs), to the Marine Environmental Data Information Referral System (MEDI);

to develop their NODCs to serve as additional RNODCs in order to assist the WDCs (Oceanography) by providing various necessary services for international programmes and projects co-ordinated by the Commission, or conducted by it in co-operation with other international organizations;

Invites UNEP to co-operate closely with the Commission in the exchange of oceanographic data, including information on marine environmental data.

Resolution XII-7

TSUNAMI WARNING SYSTEM IN THE PACIFIC

The Intergovernmental Oceanographic Commission,

A

Having received the Summary Report of the Eighth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific (document IOC/ITSU-VIII/3) which was held in Suva, Fiji, in April 1982,

Expresses its thanks to the Government of Fiji for hosting the Eighth Session and for providing all necessary facilities for its successful conduct;

Accepts the Summary Report of the Eighth Session and approves the recommendations contained therein;

Urges Member States in the region to approach UNDP and other bilateral/multilateral funding agencies for assistance in the planning, provision and installation of national and/or regional tsunami warning systems;

Invites UNDP to assign a higher priority to the IOC project proposal on 'Mitigation of Tsunami Hazards in the Pacific';

Expresses its satisfaction at the improvement of co-ordination between ITSU and the IUGG Tsunami Committee.

B

Taking into account that the post of the Associate Director of the International Tsunami Information Center (ITIC), is likely to become vacant from the middle of 1983,

Urges Member States to forward to the Secretary of IOC the names of suitable candidates for this post at their earliest convenience, bearing in mind that the salary and related emoluments for the incumbent have to be covered by his government.

Expresses its appreciation to the Government of Canada for their secondment of the present incumbent in the above-mentioned post.

Resolution XII-8

A COMPREHENSIVE PLAN FOR A MAJOR ASSISTANCE PROGRAMME TO ENHANCE THE MARINE SCIENCE CAPABILITIES OF DEVELOPING COUNTRIES

The Intergovernmental Oceanographic Commission,

Recognizing that marine science and technology constitute an essential basis for the peaceful and rational use of the oceans and their resources, and the protection and the preservation of the marine environment,

Recognizing further that adequate national capacities in the marine sciences will facilitate effective transfer and use of knowledge and technology, as well as effective international co-operation on global, regional and subregional levels, and full participation in the programmes of the Commission,

Considering that an urgent need exists to bridge the scientific and technological gaps between the industrialized and developing countries,

Recalling resolution 2/06 of the twenty-first session of the General Conference of Unesco which recommended that the Director-General of Unesco give special attention to the need to strengthen Unesco's 'intergovernmental programme in the marine sciences and ocean services, in order to assist Member States, in particular, developing countries, to cope with the demands placed on them in connection with the new ocean regime emerging from the Third United Nations Conference on the Law of the Sea',

Recalling further the resolution adopted by the Third United Nations Conference on the Law of the Sea (contained in United Nations document No. A/CONF. 62/L. 127) on 'Development of National Science, Technology and Ocean Service Infrastructures' which, inter alia, recommends that all competent international organizations expand programmes within their respective fields of competence in marine science, technology and ocean services, and recommends that bilateral and multilateral funding agencies augment and co-ordinate their operations for the provision of funds to developing countries for the preparation and implementation of the aforementioned programmes,

Having reviewed the 'Comprehensive Plan for a Major Assistance Programme to Enhance the Marine Science Capabilities of Developing Countries' (document IOC/EC-XV/8 Annex 5 rev.) which was prepared in response to Resolution EC-XIII. 15,

Recalling Resolution EC-XV. 5, which: recommended to the Assembly that it consider the adoption of the Comprehensive Plan; further recommended the developing Member States to make every possible effort to develop further, or, as appropriate, establish national oceanographic co-ordinating bodies or their equivalent, to facilitate the transfer of knowledge and technology they require; and urged the member organizations of ICSPRO to provide all possible support to the implementation of the Comprehensive Plan,

A

Adopts the Comprehensive Plan, as well as the guidelines provided in the document on modalities for its implementation (document IOC-XII/8 Annex 10);

Invites the Director-General of Unesco to take any actions that he deems appropriate to enhance the promotion and implementation of the Comprehensive Plan and in particular to:

(i) place it before the Executive Board and the twenty-second session of the General Conference of Unesco;

(ii) mobilize needed extra-budgetary financial and other resources required for its preparatory phase;

(iii) bring to the notice of the bilateral and multilateral international funding agencies, and subsequently to host a high-level consultation to provide them with information on the concept and content of the Plan and to identify, so far as possible, ways and means by which they can assist in its implementation.

B

Requests the TEMA ad hoc Group for Implementation and Co-ordination, supplemented as necessary by advisers from donor Member States and with the collaboration of appropriate units of Unesco, in particular the Division of Marine Sciences (OCE), to assist as required with preparations for the proposed consultation referred to in section A (iii) above;

Decides to proceed with the implementation of those elements of the Comprehensive Plan, as part of the TEMA activities of the Commission, for which budgetary and administrative resources can be made available, and to prepare, on a trial basis, a limited number of Marine Science Country Profiles, in consultation with appropriate United Nations and other international organizations.

C

Urges the Member States of the Commission:

(i) to establish and maintain appropriate mechanisms for the formulation of national marine science policies;

(ii) to improve or establish, as required, National Oceanographic Commissions or equivalent bodies, composed, as appropriate, of representatives of interested government departments, universities and research institutions actively involved in marine science and technology and other related aspects of ocean affairs; to maintain liaison with national users of the results of marine scientific research; to work closely with other national institutions and international organizations concerned with this multidisciplinary field; and to develop and support marine science activities, using the mechanisms proposed in the Comprehensive Plan, ensuring the close involvement of their national scientific community;

(iii) to give priority to the marine sciences as an essential element in the development of socio-economic activities and to take the initiative of applying to UNDP, the United Nations Financing System for Science and Technology for Development (UNFSSTD) and other sources of funding in support of projects to be developed under the Comprehensive Plan.

Resolution XII-9

SECOND PREPARATORY CONFERENCE OF GOVERNMENTAL EXPERTS TO FORMULATE A DRAFT CONVENTION ON THE LEGAL STATUS OF OCEAN DATA ACQUISITION SYSTEMS (ODAS)

The Intergovernmental Oceanographic Commission,

A

Recognizing the progress made by many Member States in buoy technology and in the number of deployed drifting and moored buoys, as well as other oceanographic instrumentation platforms installed in the ocean or on the sea bed,

Recalling Resolutions VI-14 and XI-19 and Resolution 3 of the Unesco/IMO Preparatory Conference on the Legal Status of Ocean Data Acquisition Systems (ODAS) (Paris, February 1972),

Recognizing further that both Unesco (through the IOC) and the International Maritime Organization (IMO), have a role to play in ensuring that ODAS are deployed effectively and safely for scientific purposes,

Invites IMO to join with the Commission (in consultation with Unesco) in carrying out a study of:

(i) changes that have taken place since the first preparatory conference, taking into account, in particular, the provisions of the Convention on the Law of the Sea;

(ii) the funding and staff effort needed to prepare and convene a second preparatory conference, as well as a subsequent plenipotentiary conference; and

(iii) possible timing for the second preparatory conference,

in order to permit the governing bodies of IMO and IOC to assess the justification for continuing with this activity in the prevailing circumstances.

B

Recalling also Resolution 1 of the above-mentioned first preparatory conference,

Having been informed that, following the introduction of new Buoyage Regulations, IMO is preparing a revised text of Technical Annex II of the Draft Convention on ODAS concerning Marking and Signals,

Requests IMO to give this revised text wide dissemination as soon as it is ready;

Recommends its voluntary use by Member States as provisional guidelines for national measures, as heretofore.

Resolution XII-10

UNESCO MEDIUM-TERM PLAN

The Intergovernmental Oceanographic Commission,

Recalling Resolutions EC-XIV.1 and EC-XV.2,

Further recalling that under Article 2(h) of its Statutes, the Commission shall: 'make recommendations and provide technical guidance as to the formulation and execution of the marine science programmes of the United Nations Educational, Scientific and Cultural Organization' and that the Director-General of Unesco has invited the Commission to make available to him its views on the marine science component of the Unesco Medium-Term Plan (1984-1989),

Having studied the marine science component of the Unesco Draft Medium-Term Plan (1984-1989) included within Major Programme X on The human environment and terrestrial and marine resources,

Having examined decision 4.3 of the 115th session of the Unesco Executive Board, especially paragraphs 62-69, and, in particular, paragraph 66, wherein the Board 'Emphasizes the importance of Programme X, 4 (The ocean and its resources) and recommends the strengthening of the activities which it provides for, both because of the possibilities afforded to all countries by the optimal use of the resources of the oceans and because of the practical consequences and new responsibilities resulting, for many developing countries, from the new Convention on the Law of the Sea',

Having taken note of the proposed resolution on Major Programme X (document 4 XC/4, Annex III) to be presented by the Director-General to the fourth extraordinary session of the Unesco General Conference, especially paragraphs 13.4, 13.5 and 14 (e), the latter of which reads: 'Recommends the Director-General during the preparation of the biennial programmes for the period 1984-1989 to place particular emphasis on . . . the strengthening of activities envisaged under the programme "The ocean and its resources", taking account of the prospects opened up to all countries by the development of marine resources and by the provisions of the new Convention on the Law of the Sea',

Recognizing that marine research on coastal systems is an inseparable component of oceanographic research that interfaces with open-ocean research, as well as providing input to coastal area management;

Re-emphasizes the importance of maintaining the integrity of the marine science programme of Unesco including that of the IOC and of the Division of Marine Sciences;

Recommends that Programme X. 4 (The ocean and its resources) and the ocean-related activities included in Programme X. 5 (Management of coastal and island regions) be considered as the marine science component of the Medium-Term Plan and be executed as an integrated programme;

Urges Member States to consider, and adjust as required, the formulation of paragraphs 13. 4 and 13. 5 of the proposed resolution on Programme X in the light of the role and functions of the Commission as defined by its Statutes, leading to a subsequent rewording of Programmes X. 4 and X. 5 of the Medium-Term Plan, so as to ensure an integrated approach to the study of marine science,

Further urges Member States to ensure that their national delegations to the fourth extraordinary session of the Unesco General Conference support the position of giving high priority to the strengthening of Programme X. 4 within the 1984-1989 Unesco Medium-Term Plan;

Invites the Director-General to convey the views of the Commission to the fourth extraordinary session of the Unesco General Conference;

Further invites the Director-General to give favourable consideration to the views of the Commission and to take them into account when preparing the biennial programmes for the period 1984-1989, in order to enhance Unesco's role in marine science.

Resolution XII-11

IOC PROGRAMME AND BUDGET 1984-1985

The Intergovernmental Oceanographic Commission,

Having considered the Draft Programme and Budget for the 1984-1985 biennium, prepared in accordance with guidelines established by the Fifteenth Session of the Executive Council, which encouraged identification of any measures that might result in savings,

Taking into account the budgetary implications of decisions taken at the Twelfth Session of the Assembly,

Recalling that the Fourteenth Session of the Executive Council concluded that an increase in the Commission's budget of about 30 per cent for the period 1984-1985 is essential if the IOC is to respond effectively to the increasing needs of its Member States, and to undertake the new scientific programmes approved by its Member States,

Noting with appreciation the positive statements made on the IOC programme by the Director-General and the members of the Unesco Executive Board at its 115th session,

Noting also decision 4.1 of the 115th session of the Unesco Executive Board which recommended that the fourth extraordinary session of the General Conference 'suggest to the Director-General a working hypothesis concerning the total volume of resources that could be envisaged when preparing the Draft Programme and Budget for 1984-1985 (22 C/5)',

Noting further that the Draft Programme and Budget for 1984-1985 submitted to the Assembly had been prepared with little indication as to the resources that were likely to be available to the IOC,

Approves the general lines of actions in the Draft Programme and Budget for 1984-1985 as contained in document IOC-XII/3 Annex 13;

Invites the Director-General of Unesco to take into account the budgetary proposals made by the Commission for the 1984-1985 biennium, when Unesco document 22 C/5 is being prepared;

Urges Member States to muster all possible support for the Commission's programme and budget when it is considered by the General Conference of Unesco at its twenty-second session.

Resolution XII-12

FUNDS-IN-TRUST CONTRIBUTIONS TO THE COMMISSION

The Intergovernmental Oceanographic Commission,

Pursuant to Rule 55 of the Rules of Procedure of the Commission which states that the Assembly or the Executive Council may accept or reject any offer of a voluntary contribution for a trust fund, the expenditure of which has been restricted or designated for specific purposes by the contributor,

Accepts with appreciation the contributions of Canada, France, Federal Republic of Germany, Japan, Mexico, Netherlands, Sweden, United Kingdom, United States of America, in the amounts and for the purposes designated below, and extends its thanks to these Member States for their contributions:

Canada	C$ 15,000 per annum for five years, of which C$ 10,000 is to be used for studies related to ocean dynamics and climate
France	FFr. 155,000 for TEMA, including expert missions, shipboard fellowships and study grants; and for studies related to ocean dynamics and climate
	Donation of equipment in support of IOCARIBE
Germany (Fed. Rep. of)	DM77,000 for secondment of an expert to the IOC Secretariat
	DM30,000 in support of studies related to ocean dynamics and climate
	Financing of a training course on ocean living resources in the CINCWIO region in 1983
Japan	$30,000 per annum for two years, for implementation of the WESTPAC Programme
Mexico	$10,000 per annum for three years for TEMA-related activities
Netherlands	Guilders 20,000 in support of studies related to ocean dynamics and climate
Sweden	$7,000 for intercalibration exercises within MARPOLMON provided that sufficient resources are made available for the exercise as a whole
United Kingdom	$10,000 per annum for three years to support the activities of the IGOSS Operations Co-ordinator
United States of America	Up to $350,000 to support the post and related activities of the Secretary of the Joint SCOR/IOC CCCO within the IOC Secretariat at Unesco Headquarters for the period 1982-1984
	$50,000 to support participation by scientists from developing countries in activities related to the planning of international research programmes
	$75,000 per annum for two years (1981-1982) to support IOCARIBE, including the regional Secretariat

Authorizes, pursuant to Rule of Procedure No. 55, expenditure of these contributions, when received, for the specific purposes designated by the contributors; and

Instructs the Secretary to report on the use of these funds to each session of the Executive Council or Assembly.

Resolution XII-13

PROGRAMME AND BUDGET OF THE UNESCO DIVISION OF MARINE SCIENCES

The Intergovernmental Oceanographic Commission,

Recalling that under Article 2(h) of its Statutes, the Commission shall 'make recommendations and provide technical guidance as to the formulation and execution of the marine science programmes of the United Nations Educational, Scientific and Cultural Organization',

Further recalling the discussions of the Executive Council on this subject at its Fourteenth and Fifteenth Sessions, and that it requested that a report on the draft 1984-1985 programme and budget of the Division of Marine Sciences be made available to the Twelfth Session of the IOC Assembly,

Having studied the report of the Division on its 1982 activities and the draft programmes and budgets for the years 1983 and 1984-1985,

Having taken into consideration Resolution XII-10 concerning the Unesco Draft Medium-Term Plan,

Recognizing that marine research on coastal systems is an inseparable component of oceanographic research that interfaces with open-ocean research, as well as providing input to coastal area management,

Expresses its appreciation of the achievements of the Division of Marine Sciences as contributions to the IOC objectives;

Expresses approval of the strategy of the Division in which marine science development is considered to be based on three essential components:

(i) manpower development in which marine science training is accomplished through research and formal courses;

(ii) infrastructure development; and

(iii) scientific programme development;

Agrees that the extra-budgetary marine science programme of Unesco should be considered as a large-scale implementation phase related conceptually to the regular programme, and, in the future, to the Comprehensive Plan for a Major Assistance Programme to Enhance the Marine Science Capabilities of Developing Countries;

Recognizes that co-operation with other international governmental and non-governmental organizations is necessary to provide high quality services to Member States;

Recommends strongly that the programme of the IOC and the marine science programme of Unesco, other than that of the IOC, remain complementary and mutually supporting, especially in the field of training, education and mutual assistance, and that joint activities to this end be organized;

Invites the Director-General of Unesco to continue to ensure that the various units of Unesco Headquarters and in the regions co-ordinate closely their actions in executing the marine science programme, and that these units co-operate with the IOC Secretariat to maintain the coherence of the marine science programme of Unesco and its IOC so as to render the most effective possible service to the Member States.

Resolution XII-14

AN IOC PROGRAMME GROUP FOR THE
CENTRAL INDIAN OCEAN (PG/CINDIO)

The Intergovernmental Oceanographic Commission,

Recognizing the important role played by its regional subsidiary bodies in the implementation of its programmes and the achievement of its objectives,

Recognizing also that no IOC regional subsidiary body serves the central Indian Ocean and that, therefore, no intergovernmental mechanism exists for co-operation between the Member States of that region,

Recognizing further that a better understanding of the major oceanographic processes, particularly as they relate to climate and living resources in the region, is needed,

Being aware of the importance of relating the major ocean processes in this part of the Indian Ocean with those in the western part, covered by the Co-operative Investigation in the North and Central Western Indian Ocean (CINCWIO) and with the Programme Group for the Western Pacific (WESTPAC),

Recalling the active co-operation that existed amongst the Member States of this region and other interested Member States from outside the region, during the International Indian Ocean Expedition (IIOE),

Acknowledging the substantial contributions of the countries of this region to IOC programmes, and the considerable efforts being made by these countries to develop their marine science capabilities, often with the assistance of the IOC,

Acknowledging also that further efforts are required in terms of training, education and mutual assistance, particularly under the 'Comprehensive Plan for a Major Assistance Programme to Enhance the Marine Science Capabilities of Developing Member States', and under other forms of TEMA, which would place eventual marine scientific programmes and ocean services in the region on a sound footing,

Believing that the basic criteria for the formation of a Programme Group are met with respect to the central Indian Ocean,

Bearing in mind the existence of the Unesco Regional Office for Science and Technology for South and Central Asia (ROSTSCA) in New Delhi, and the decision of the Director-General of Unesco to nominate Marine Science Officers in ROSTs also as IOC Assistant Secretaries,

Decides to create an IOC Programme Group for the central Indian Ocean, to bear the acronym CINDIO;

Calls upon all IOC Member States from the region, as well as other interested Member States of the Commission having scientific interests in the region, to notify the Secretary of their intention to become members of the Programme Group, and to submit preliminary proposals for co-operative scientific research projects, as a basis for the development of a programme of marine scientific research, of related ocean services and relevant training, education and mutual assistance, to be undertaken by the Programme Group;

Decides also to convene a scientific workshop in late 1983 or early 1984 for the purpose of defining the terms of reference of the Programme Group, the geographic limits of the region, as well as identifying elements of a co-operative programme to be developed in the field of ocean science and ocean services, and their TEMA components, to ensure effective participation of Member States in the programme;

Budgetary implications:

1984 Workshop $30-35,000 (English only; not foreseen in budget);

1985-1986 PG/CINDIO-1 $25-30,000 (English only).

Resolution XII-15

SUPPORT FOR THE IOC SECRETARIAT FOR IOCARIBE

The Intergovernmental Oceanographic Commission,

A

Recalling that, by Resolution IX-13, the Commission established the IOC Association for the Caribbean and Adjacent Regions (IOCARIBE) on an experimental basis for a period of six years,

Recalling also that the IOC Secretariat for IOCARIBE, which was located in Trinidad and Tobago from July 1976 to April 1979, was then moved to Costa Rica, where it has been located to the present time,

Expresses its deep appreciation to the Governments of Trinidad and Tobago and of Costa Rica for assuming host-country responsibilities and for generously providing operational support and services to the IOC Secretariat for the IOCARIBE during its existence as an IOC regional association, and to the Government of the United States of America for its provision of funding for the post of IOC Assistant Secretary for IOCARIBE.

B

Recalling further that Resolution IX-13 called for the IOC Secretariat for IOCARIBE to be located in the same country as that of the Chairman of the Association,

Calls upon Member States to consider favourably the continuation of operational support, staffing and services for the IOC Secretariat for IOCARIBE until the next session thereof, at which time new officers will be elected and new secretariat arrangements will be decided upon.

Resolution XII-16

ESTABLISHMENT OF AN IOC SUB-COMMISSION FOR THE CARIBBEAN AND ADJACENT REGIONS

The Intergovernmental Oceanographic Commission,

Having considered document IOC/INF-495 "Evaluation of IOCARIBE",

Having adopted Guidelines for the Structure and Responsibilities of IOC Sub-Commissions (Annex V to the Summary Report of the Twelfth Session of the Assembly),

Recalling Recommendation IOCARIBE-III.7, in which the Member States of the Association requested the Assembly to establish a Regional Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) in place of the present Association immediately following the termination of its experimental period,

Establishes the IOC Sub-Commission for the Caribbean and Adjacent Regions, keeping the acronym IOCARIBE, to replace the Regional Association set up by Resolution IX-13, to become fully operative with the convening of the First Session of the Sub-Commission;

Invites Member States to continue to implement the existing programmes of the Association until the First Session of the Sub-Commission is convened;

Instructs the Secretary to inform Member States concerned and to take appropriate measures to organize the First Session of the Sub-Commission, in 1983, immediately after a final brief session of the Association.

Resolution XII-17

FREQUENCY OF EXECUTIVE COUNCIL SESSIONS

The Intergovernmental Oceanographic Commission,

Having studied document IOC-XII/8 Annex 17 (Frequency of Executive Council sessions),

Recalling the discussion on this subject at the Fourteenth and Fifteenth Sessions of the Executive Council,

Taking into account that the costs, in terms of budget, logistics and staff resources, of organizing, convening and following up a session of the Executive Council represent a considerable proportion of the Commission's resources which could be partially redeployed in the implementation of programmes,

Recognizing also that the responsibilities of the Executive Council could be adequately discharged if it held one major session (7-8 working days) approximately half way between two consecutive ordinary sessions of the Assembly, and one short session immediately prior to each session of the Assembly, acting also as the Steering Committee for that session of the Assembly,

Decides to amend Rule of Procedure No. 19 (2) to read: 'The Executive Council shall hold two ordinary sessions during the interval between ordinary sessions of the Assembly at times and places to be determined by the Council. One such session shall be held immediately prior to the opening date of the next ordinary session of the Assembly.

Resolution XII-18

IOC CO-SPONSORSHIP OF GESAMP

The Intergovernmental Oceanographic Commission,

Recognizing the importance of strengthening co-operation between the Commission, particularly its Working Committee for GIPME, and the GESAMP, especially with respect to the continuing review of the health of oceans, with which both GESAMP and the Working Committee are particularly concerned,

Having been informed that preliminary discussions regarding possible IOC co-sponsorship of GESAMP were held at the GESAMP intersecretariat meeting in October of 1981,

Being aware that the Unesco Technical Secretary for GESAMP has been provided, since 1973, by the IOC Secretariat at the request of the Division of Marine Sciences of Unesco,

Being appreciative of the efforts already undertaken by the Director-General of Unesco, in conjunction with the last revision of the Memorandum of Understanding establishing GESAMP, to strengthen the association between IOC and GESAMP,

Desiring to become a co-sponsor of GESAMP,

Requests the Director-General of Unesco to explore, with the other United Nations organizations co-sponsoring GESAMP, such co-sponsorship and ways in which the Working Committee for GIPME can be formally represented at GESAMP intersecretariat meetings.

Resolution XII-19

MABAHISS--JOHN MURRAY INTERNATIONAL SYMPOSIUM, ALEXANDRIA, SEPTEMBER 1983

The Intergovernmental Oceanographic Commission,

Having been informed that the University of Alexandria will convene in September 1983 an international symposium to be held in Alexandria, Egypt, to commemorate the Fiftieth Anniversary of the John Murray Expedition to the Indian Ocean on board the Research Vessel 'MABAHISS', from September 1933 to May 1934,

Noting that this international symposium is being co-sponsored by the Arab Republic of Egypt (the University of Alexandria and the Academy of Scientific Research and Technology), by the United Kingdom (Royal Society and the Natural Environment Research Council), and by Unesco,

Learning that this international symposium will review the progress of oceanography over the last fifty years and discuss proposals for future work in the eastern Mediterranean, the Red Sea, the north-western Indian Ocean and adjacent gulfs, and will be a suitable forum for exploring ways and means of supporting oceanographic activities in these regions,

Accepts the invitation to co-sponsor the symposium;

Decides to use its outcome as a basis for the planning of future marine scientific activities of IOC in the above-mentioned regions.

Budgetary implications:

$10,000 in 1983.

Resolution XII-20

CO-OPERATION BETWEEN IOC AND UNEP IN MARINE POLLUTION RESEARCH AND MONITORING

The Intergovernmental Oceanographic Commission,

Having been informed that specific arrangements are being worked out between the Secretariats of the UNEP Regional Seas Programme Activity Centre and the Commission, on co-operation in the field of marine pollution research, on the methodology required for monitoring, as well as on regional co-operation,

Endorses Resolution EC-XV.3, which invites UNEP to support the Working Committee for the Global Investigation of Pollution in the Marine Environment and the Marine Pollution Monitoring Programme;

Calls upon UNEP to:

(a) Increase its support to the Global Investigation of Pollution in the Marine Environment (GIPME), to the Marine Pollution Monitoring Programme (MARPOLMON) and to other components of GIPME, such as the project on the assessment of background levels of selected pollutants in open-ocean waters, a proposal on which was submitted to UNEP for support in April 1982, and which will provide fundamental information for use in the UNEP Regional Seas Programme;

(b) Arrange, as far as possible, the IOC regional and technical subsidiary bodies, to execute those parts of the UNEP Regional Sea Action Plans that correspond to the mandate of IOC, so as to avoid duplication of effort and the inefficient use of the resources of the Member States.

Resolution XII-21

RELATIONSHIP BETWEEN THE IOC AND UNEP

The Intergovernmental Oceanographic Commission,

Recalling Resolutions XI-5, XI-31 and EC-XIII.3,

Noting also the concerns expressed by the Executive Council at its Fourteenth Session regarding the co-operation between the IOC and UNEP, especially the UNEP Regional Seas Programme, which is of particular interest to the Commission,

Being convinced that a clear-cut assignment of functions is essential in order to improve co-ordination between the IOC and UNEP, and to strengthen the services provided by the United Nations system to Member States in the field of marine pollution research and monitoring and the protection of the marine environment,

Decides to present a report to sessions of the UNEP Governing Council, on ongoing and planned programmes and other activities of the Commission in this field;

Invites the UNEP Governing Council to review this report and to determine the extent to which UNEP is prepared to co-sponsor these programmes and activities with the IOC;

Requests the Chairman, or a designated officer in his stead, to represent the Commission at the forthcoming meeting of the Governing Council of UNEP and formally to present the IOC report at that meeting;

Also requests the Chairman to inform the Director-General of Unesco of the situation and of future developments;

Urges Member States to give particular attention to co-ordination of their national positions internally on this issue prior to meetings of the UNEP Governing Council and of the IOC governing bodies;

Further invites UNEP to inform the IOC Assembly and Executive Council regularly on UNEP programmes and activities of interest to the Commission.

Budgetary implications:

None.

Resolution XII-22

MEMBERSHIP OF THE EXECUTIVE COUNCIL

The Intergovernmental Oceanographic Commission,

Having studied document IOC-XII/6 Annex 19 (Membership of the Executive Council),

Recognizing that it would be of considerable benefit to the Commission's work to have an enlarged membership of the Executive Council, taking into account the principle of geographical representation,

Decides to amend Rule of Procedure No. 18, paragraph 1, to read "The Executive Council shall consist of the Chairman, the four Vice-Chairmen and the representatives of twenty-seven Member States of the Commission to be elected by the Assembly in accordance with Article 5 of the Statutes of the Commission. State Members of the Executive Council shall be eligible for re-election."

ANNEX III

ADDRESSES

A. ADDRESS BY MR AMADOU-MAHTAR M'BOW
DIRECTOR-GENERAL OF THE UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION
(Unesco)

1 November 1982

Mr Chairman,
Vice-Chairmen,
Distinguished delegates, representatives of the United Nations organizations and observers,
Ladies and Gentlemen,

It gives me great pleasure to address you on the occasion of the Twelfth Assembly of the Intergovernmental Oceanographic Commission and to discuss some of Unesco's activities in the marine sciences with you.

First of all, the amount of work that has been accomplished by the Intergovernmental Oceanographic Commission over the past two decades, thanks to the exemplary collaboration within its framework between specialists in all disciplines relating to the marine scien es, is most gratifying. The basic structures it has enjoyed within Unesco enable it to promote co-operation on a large scale with numerous organizations in the United Nations system through the intermediary of the Inter-Secretariat Committee on Scientific Programmes Relating to Oceanography. From the very outset, therefore, it has been able to play a leading role in research into all aspects of the marine sciences.

But the Intergovernmental Oceanographic Commission is now about to embark on a new phase of its existence, in which it will attempt to anticipate Member States' aspirations, laying special emphasis on the development of knowledge and its broad dissemination. The preparation of a Comprehensive Plan for Major Assistance to Enhance the Marine Science Capabilities of Developing Countries, which would be implemented in the context of regional or subregional projects and financed with extra-budgetary funds, is in keeping with this objective and is therefore a welcome initiative. You may rest assured that Unesco will endeavour to mobilize all the resources at its disposal, for instance those of the Division of Marine Sciences, the Regional Offices for Science and Technology and all the other units concerned in the Secretariat, in support of this initiative.

In this connection, I have taken note of your wishes regarding an increase in the staff of the Secretariat of the Commission and an expansion of its budget. I shall refer the matter, of course, to the next ordinary session of the General Conference and I hope that all the countries represented in the Intergovernmental Oceanographic Commission will firmly support the proposals that I make to the General Conference. I must say that the Director-General's task is not always easy when he has to submit programmes to Member States, especially when these programmes call for an increase in resources, at a time when attitudes to the development of multilateral international co-operation are dominated by a kind of Malthusianism. Pending further developments, therefore, I should like to express my appreciation of the efforts of Member States to expand the activities of the Commission by placing qualified personnel at Unesco's disposal, by organizing training courses and practical training

programmes on board research vessels or by contributing to the Organization's funds-in-trust arrangements. In addition, I should like to make special mention of the growing importance attached to the development of research in the field of the marine sciences by certain Third World countries which are able to afford it. Two days ago I was in the Gulf countries when a new oceanographic research vessel constructed for a Member State and financed by the Member State with Unesco's co-operation was brought into commission. On that occasion, I discussed the problem of marine research development in the Gulf with the vice-chancellors and presidents of seven universities, since all the universities in the region are engaged in preparing new programmes. Similar activities are being conducted, as you know, in other parts of the world.

Mr Chairman,

This Assembly is taking place on the eve of an important event which will doubtless have a lasting impact on the future of international relations: I refer to the signing in Jamaica in December of the Convention drawn up by the United Nations Conference on the Law of the Sea. This Convention represents the culmination of an effort, spanning a period of seven years, to contribute to the establishment of a legal order facilitating international maritime communications, the peaceful utilization of the seas and oceans, the fair and rational exploitation of their resources, the investigation and protection of the marine environment and the conservation of the biological resources it contains. But we must bear in mind that the Convention is in danger of becoming a dead letter for many states if they are denied the opportunity to take the greatest possible advantage of the new technologies available to exploit marine resources. In this connection, the reference to research on the seas and oceans assumes special significance, in that a major international treaty is recognizing the intrinsic value of scientific knowledge and the need for a particular system to promote it.

The preparation of a new Charter of the Oceans is also a welcome development and I am particularly pleased that the extremely close co-operation established between Unesco and the Secretariat of the Conference played a part in achieving that result. I am also glad to note that the role played by the Intergovernmental Oceanographic Commission and its support for the work of the Conference were appreciated throughout the negotiations.

I should like to take this opportunity of paying tribute to the Commission for its efforts during this period and for the high quality of the work it has accomplished, particularly in identifying fields of special interest to Unesco, in parallel with the deliberations of its scientific advisory bodies aimed at pinpointing major trends in the marine sciences as we approach the end of this century. This was indeed an extremely valuable contribution which was of great assistance in the formulation of Unesco's Medium-Term Plan for the period 1984-1989, which is to be submitted to the extraordinary General Conference due to begin its proceedings here on 28 November.

Ladies and Gentlemen,

The adoption of the new Charter of the Oceans offers a historic opportunity to present ideas for turning the study, preservation and exploitation of the oceans into a major effort to be organized, stimulated by practical means the establishment of relationships based, justice, solidarity and progress between all the peoples of the world.

The rational exploitation of the oceans could open up a new era in the history of mankind, access to my mind comparable, in terms of the importance of the changes it is likely to bring about in our lives, to the exploration of known and undreamed worlds and advances in the fields of medicine, science and agriculture. It is vital, however, that rather than creating new disparities and new sources of tension, these changes should foster ever closer and more fruitful co-operation between all nations.

The sea is a living environment and all its parts are interdependent. Changes in flora and movements of fauna affect all interactions, and pollution anywhere spreads rapidly. In order to study this environment, to protect it from the dangers to which it is exposed and to extract from it the extraordinary riches it contains we require new forms of international co-operation capable of mastering the necessary scientific and technological resources but at the same time offering all peoples the opportunity to take part in this great venture and to enjoy the fruits they have a right to expect from it. This is the final goal towards which your Conference is working and I hope that your efforts will meet with unqualified success and exert the greatest possible international influence throughout the world.

M. ADDRESS BY
MR LOUIS LE PENSEC
FRENCH MINISTER FOR THE SEA

22 November 1973

Mr Chairman,
Ladies and Gentlemen,

It is with great pleasure, Mr Chairman, I have come as Minister for the Sea of the Government of the French Republic to pay a visit to this Assembly.

[illegible] I have the honour to be head is located on the other [illegible] France, it is very natural and for me to come across [illegible] colleague and a friend.

[illegible] taking place at a time that may be considered as [illegible] the Twelfth Session of [illegible] is held six [illegible] in New York, [illegible] in Geneva.

[illegible] Prime Minister Pierre [illegible] on 21 September [illegible] national Conference, [illegible] France [illegible] at the same time, he [illegible] the work [illegible] constructive [illegible] solutions.

[illegible]

[illegible]

[illegible]

technology and ocean service infrastructures: this resolution provides a good example of the importance of such action, by inviting all countries, regardless of their degree of development, to organize themselves nationally, and to co-operate and concert their views both regionally and globally, in order to obtain more scientific knowledge of the oceans and a greater mastery of the technologies which make such knowledge possible.

The French Government is fully aware that this depends first and foremost on a better understanding of the basic sciences governing the marine environment. Whether in the field of biology and ecology, geology and geophysics, or the study of the oceans or marine climates, we are making a substantial and unremitting effort.

We are convinced that in this additional knowledge lies our only hope of solving the complex problems of the marine world.

The fact is that we must at the same time develop and protect the coast and coastal areas.

We must also develop fisheries; but we must offset this by analysing the effects of catches, improving our inventory of fish stocks and above all restocking the seabeds and promoting ocean farming.

With its immense mineral and hydrocarbon resources, the sea is a source of independence as regards energy; it should be our twofold concern to exploit and manage this wealth with extreme care.

Indeed, the magnitude of the task is such that it requires an effort of co-operation by all nations. Like the atmosphere which surrounds our planet, the marine environment should not be the private preserve of a privileged few.

If man fails to understand the processes governing this environment and the resources which it contains, or runs the marine risk of learning or even irreversibly destroying that which should be one of the indispensable factors of development for the future.

The task of your Commission is to facilitate a dialogue between countries with ocean economies and those with the necessary research facilities, and between coastal states and those that are land-locked or in a less favourable geographical situation. It also has a decisive role to play, in association with the Division of Marine Sciences, Unesco, and various other international organizations, in facilitating the training, development of research capabilities throughout the world and providing appropriate training for the key personnel required for their proper functioning.

[illegible] as it is often proved, which specialized in education, science and culture, is to make use of the whole range of its facilities and a central position in the organization, to establish systems of co-operation particularly adapted between States, which possess the means of ocean research, and the other countries of the world. Without such a close link of its scientific activities

It is [illegible] that the United Nations, in its [illegible] the sea, [illegible] to encourage the establishment of [illegible] and to [illegible] the use of [illegible] the sea, [illegible] the [illegible] of [illegible] and [illegible] the [illegible] of [illegible] and [illegible] of [illegible] and [illegible] of [illegible] and

offered to all countries by optimum utilization of marine resources and in view of the practical consequences and new responsibilities resulting for a large number of developing countries from the new Convention on the Law of the Sea.

I warmly welcome this convergence of views, and I can assure you that the French Government and the delegation which represents it at the Intergovernmental Oceanographic Commission will spare no effort to ensure that the wishes expressed by these high international authorities are translated into action. In our view the co-operation of all countries in the oceans, and their mutual understanding of each other's interests, are a decisive factor--which we would like to see setting an example--in the North-South dialogue, which the French Government considers to be one of the main planks of its foreign policy.

C. INAUGURAL ADDRESS BY Dr ABDUL RAZZAK KADDOURA ASSISTANT DIRECTOR-GENERAL OF UNESCO FOR SCIENCE

It is a great pleasure for me to welcome you to Unesco on behalf of the Director-General and myself. I should like to inform you that the Director-General, who is at present on mission, very much regrets not being able to address the Assembly at its formal opening ceremony as he had originally intended. However, he expects to be with you on 12 November.

This Session of your Assembly is taking place three years after the last one. As you know, this was due to the need to renovate Unesco's conference halls so that big sessions, such as yours, could have more room and enjoy better working conditions. The documentation submitted to you by the Secretary reflects the significant progress made by the Commission since its last Session, and is rather impressive. This is due, I believe, to the enlightened policy formulated by your governing bodies, to the very active participation of the Member States, and to the leadership provided by the Officers of the Commission under your able and dynamic Chairman, my very good friend Dr Ayala-Castañares.

With its present membership of 108 Member States, and with the diversity of its programmes and activities, the Commission has succeeded in securing a key and respected position in the United Nations system as the leading organization for the promotion and co-ordination of marine scientific programmes, the development and maintenance of ocean services and the related training, education and mutual assistance in the marine sciences. I am pleased to recall that Unesco took the initiative to establish the Commission more than twenty years ago, and is very proud of your achievements; this was evident in the very positive comments made by the great majority of delegations to the 115th session of the Executive Board of Unesco, when debating the marine sciences programme. The Director-General will therefore be looking forward with great interest to the views that the Assembly may wish to put forward on the marine science component of the Medium-Term Plan of Unesco and to its guidance on budgetary and staff requirements for the biennium 1984-1985, which are among the major items on your agenda. Your recommendations would help in the preparation of the proposals that the Director-General will present to the forthcoming session of the Unesco General Conference, as the body responsible for decisions on such matters. I can say, and the Director-General will certainly elaborate on this point when he addresses you, that Unesco will continue to make every possible effort to strengthen the Commission and to provide support to its work through the Division of Marine Sciences and through the mobilization of other units, such as the Regional Offices for Science and Technology (ROSTS) and the Operational Programmes Division (OPS).

We understand that proposals for new programmes on Ocean Science and Living Resources and Ocean Science and Non-Living Resources will be promoted and implemented, especially through the regional subsidiary bodies of the Commission, thus providing better opportunities for developing countries to participate actively in them. Progress achieved in the planning of the oceanographic component of the World Climate Programme is also rather encouraging. The close co-operation maintained with the scientific community--particularly through SCOR and other advisory bodies of the Commission--in this and other programmes is, in our view, a very healthy approach. We hope that they will continue to play an active role in the planning of the scientific programmes that form part of the work of the Commission which, in turn, is the appropriate international intergovernmental organization for the implementation and co-ordination of such programmes. This is clearly reflected in its Statutes and by its unique position as a joint specialized mechanism of the United Nations organizations that are parties to the Agreement governing the Inter-Secretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO). We attach great importance to the further development of the close co-operation already achieved between the Commission and these organizations. A good example of such co-operation is the Integrated Global Ocean Services System (IGOSS), developed jointly with the World Meteorological Organization (WMO). We are also aware of your intention to develop jointly with FAO a programme of Ocean Scierce and Living Resources and, with the United Nations Ocean Economics and Technology Branch, a programme of Ocean Science and Non-Living Resources. We have also observed the efforts being made by IOC in recent years to enhance co-operation with UNEP, with a particular view to ensuring that the programmes of IOC and UNEP complement each other, thus avoiding duplication and overlapping of effort, which is detrimental to the interests of Member States. Unesco sincerely hopes that UNEP will respond to these efforts as positively as possible, so as to avoid any possible misdirection of co-operation between UNEP and the various ocean agencies of the United Nations sytem or relevant organizations outside it; this is an important matter since it has an important bearing on the relations amongst these agencies and organizations in the light of their respective mandates.

The co-ordination of activities at the regional level merits special attention in the coming years since this seems to be the most appropriate scale for involving developing countries in the implementation of the global scientific programmes of the Commission as well as for determining and dealing with special regional problems in the marine sciences and related aspects. The steps being envisaged by IOC to strengthen its system of regional subsidiary bodies are concordant with the policy of Unesco regarding decentralization. I am therefore, very glad to announce that, besides the Marine Science Officer attached to ROSTSEA, who is also formally assigned the functions of IOC Assistant Secretary for WESTPAC, similar arrangements will shortly be made for the ROSTs in Nairobi, Doha and Montevideo. They are part of the measures taken by the Director-General to increase Unesco's support to the Commission and to develop a more integrated approach to the implementation of the marine science programmes of Unesco.

Regarding other measures intended to strengthen the activities of the Commission, it is my pleasure to announce that the Director-General, in response to Resolution X-26 of the Tenth Session of your Assembly, and in the spirit of Resolutions 2.06 and 2.08 of the twenty-first session of the General Conference of Unesco in Belgrade, has decided to reclassify the post of Secretary IOC from the D-1 to D-2 level and to upgrade the present incumbent accordingly.

We have been particularly impressed by the detailed and timely analysis of the Convention on the Law of the Sea that has been made by the Commission with a view to assessing its implications for the Commission itself, in particular, and for Unesco, in general. Unesco recognizes the important responsibilities falling on the Commission itself as well as on Unesco as a whole.

Finally, you may wish to bear in mind, during your debates, the fact that the Executive Board of Unesco, by decision 4.1, unanimously supported the programme on the human environment and terrestrial and marine resources, which brings together domains of the utmost importance for all Member States, in which the Organization has demonstrated its effectiveness through its intergovernmental scientific programmes, and in which international and regional co-operation has proved to be particularly fruitful. By the same decision the Executive Board also emphasized the importance of the programme entitled 'The ocean and its resources' and recommended the strengthening of the activities which it calls for, both because of the possibilities afforded to all countries by the optimal use of the resources of the oceans and because of the practical consequences and new responsibilities resulting, for many developing countries, from the new Convention on the Law of the Sea.

I shall certainly try, in so far as time permits, to follow your discussions; in any case, I wish you a successful session.

D. ADDRESS BY DR AUGUSTIN AYALA CASTANARES CHAIRMAN OF IOC IN REPLY TO THE ADDRESS BY THE DIRECTOR-GENERAL OF UNESCO

12 November 1982

Mr Director-General of Unesco,
Distinguished delegates and representatives of organizations,
Ladies and Gentlemen,

Thank you very much, Mr Director-General of Unesco, for your encouraging message and for devoting your time to us during these proceedings. I must not let slip the opportunity afforded by your being here with us today, to convey to you, before this Assembly, my cordial thanks for the kindness you have shown in receiving me, whenever it has been necessary, to discuss, at length, matters relating to IOC, for which you have shown obvious understanding and good-will, borne out anew by the remarks you have just made.

It is also right that I should mention the kind consideration I have so often had from Dr Abdul-Razzak Kaddoura, the Assistant Director-General for Science, with whom I have maintained frank and constant contacts during my term of office as Chairman of the Commission.

Nor must I miss this opportunity of mentioning the very positive manner in which you presented the programme on the marine sciences, and also the response this Commission has had from the twenty-first session of the General Conference of Unesco and its Executive Board, which, at its 115th session, unanimously supported the programme 'The ocean and its resources' and recommended the strengthening of the activities it involves, both on account of the opportunities it offers to all countries for the use of marine resources and also on account of the practical consequences--for many countries--stemming from the United Nations Convention on the Law of the Sea.

In his opening address to this Assembly the Assistant Director-General for Science spoke to us of his interest in knowing the outcome of the Commission's debate on the Medium-Term Plan. This is an extremely important item on our agenda and I hope that we shall be able to present sound and convincing arguments both to you and to the forthcoming extraordinary General Conference.

I should also like to thank you for your willingness to continue the task of strengthening the Commission and giving it the necessary support through the Division of Marine Sciences and the contribution of other units such as the Regional Offices for Science and Technology and the operational programme divisions, as part of the move to decentralize Unesco's activities.

It has been the Assembly's view that priority should be given to the recognition of the status of IOC as a specialized joint mechanism within the United Nations system for marine science affairs. One of its aspirations was that the post of Secretary of the Commission should be graded at a satisfactory level; consequently, by means of Resolution X-26, you were invited Mr Director-General, to upgrade the post of Secretary of the Commission from D-1 to D-2. I myself discussed this proposal with you on several occasions. I should like to express to you my own appreciation and the profound satisfaction of IOC on learning that the reclassification of the post, according to Dr Kaddoura, is now a fact. This confirms once again your personal and professional interest in the Commission, reflected in the way in which you follow our activities so closely, and we must interpret it as a recognition of the status of the Commission in keeping with its newly recognized importance in international marine affairs. It represents, furthermore, well-deserved appreciation of the efforts and capacity for work of our Secretary and his staff.

We have arrived at a crucial point in the development of IOC. In ocean sciences, we are going to tackle the task of defining the main lines of programmes at the global, regional and subregional levels in the following areas: the Global Investigation of Pollution in the Marine Environment (GIPME); the Marine Sciences in Relation to Living Resources; the Marine Sciences in Relation to Non-Living Resources; Ocean Dynamics and Climate, and Ocean Mapping. Although these programmes are at different stages of development they all present important advances.

The ocean services have reached a stage of consolidation. It is clear that IOC can play an important part in this area, through IGOSS and IODE and really take a leading role by helping the developing countries through the Aquatic Sciences and Fisheries Information System (ASFIS) and the Marine Environmental Data Information Referral System (MEDI).

With regard to Training, Education and Mutual Assistance in the Marine Sciences (TEMA), in response to Resolution EC-XIII.15 of the Executive Council, concerning which I have had the opportunity to give you my comments, a Comprehensive Plan for a Major Programme of Assistance to Enhance the Marine Science Capabilities of Developing Countries has been drawn up. Once this Plan has been approved and put into effect, it will be possible to undertake joint action by IOC and the Division of Marine Sciences of Unesco with a view to solving a problem of crucial importance for the countries of the Third World, as was recognized in a resolution adopted by the Third United Nations Conference on the Law of the Sea.

It is extremely important at the present time to build up collaboration and co-operation with other organizations, so that IOC may continue its active role in the promotion and co-ordination of scientific programmes and may worthily perform its task as the specialized joint mechanism set up by Unesco within the framework of the agencies of the United Nations system which are members of the Inter-Secretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO). I feel that the time has come to strengthen this body, and here your intervention, Mr Director-General, may be crucial, particularly now that we have a series of new programmes which require co-ordinated approaches between the agencies.

In this Assembly we are seeking new formulas to promote the regional activities of the Commission, without, however, losing sight of the global nature of our activities.

We are all conscious of the fact that this Twelfth Assembly of the Commission is of particular importance, since it is taking place at a crucial time for international oceanic affairs.

The Third United Nations Conference on the Law of the Sea is coming to an end. Next month, in December, the corresponding Convention will be signed; this will be the culmination of unprecedented efforts in the field of international law and will mark the conclusion of a whole phase in marine affairs at the global level. Because of this Conference and the importance which the international community attaches to the oceans, the marine sciences are now being recognized as an essential factor in development at the highest governmental levels. Advantage should be taken of this particularly favourable situation so that the Commission may be assigned the importance which is its due and its own prestige and that of Unesco enhanced.

The huge potential of ocean resources--largely located in areas corresponding to exclusive economic zones and on the continental shelf--is seen to be an obvious means of helping to solve many of the serious social and economic problems oppressing mankind. For this reason, a large number of countries view the new oceanic order as an essential supporting structure for the new international economic order.

Clearly, most states can only evaluate and exploit their marine resources and conduct negotiations with other countries if they possess the requisite scientific capacity. Only in so far as they have this endogenous capacity will they be able to take advantage of their rights and fulfil their obligations regarding preservation of the marine environment and living resources, thus ensuring that the contribution of the Convention to achieving the new international economic order becomes a reality.

For a number of years, one of the Commission's concerns has been to specify the nature of its future role and functions. To this end, the Tenth Assembly in 1977 set up a Working Group on the Future Role and Functions of the Commission (FUROF). The Group carried out a very detailed study and formulated a set of basically programmatic policies. It was a somewhat premature move, however, since many member countries were justifiably unwilling to adopt a firm stance on structural aspects for the perfectly valid reason that this might hamper the delicate negotiations of the Conference.

None the less, the Eleventh Assembly showed that definite progress had been made through FUROF; for instance, the clear statement to the effect that the Commission should continue to be attached to Unesco.

This was obviously a sensible decision. On the one hand, the context could not be more propitious and, on the other, the prospect of catering for the huge demand of the developing countries for human resources in the marine sciences affords a splendid opportunity for demonstrating the soundness of the decision, since this type of function falls clearly within Unesco's fields of competence.

The new oceanic order lays down certain conditions for the conduct of marine scientific research. In this context, the Intergovernmental Oceanographic Commission is a suitable mechanism for promoting, stimulating and facilitating

scientific research through co-operation among countries, providing ample scope for the interests of both industrialized and developing countries in the framework of the IOC's objectives.

I have referred on other occasions to various problems encountered by the IOC, and this is an opportune moment to draw attention to three of them for which a solution must be sought.

First, on account of its intergovernmental character, the IOC has not yet been able to secure strong direct participation on the part of the scientific community in Member States; however, the scientific advisory services of the SCOR have been of inestimable value and are increasingly useful. Secondly, the channels of communication between the Secretariat and the structures in member countries are still limited and, thirdly, there is the problem of financial resources--there may be no doubt as to the importance of the IOC's activities for the future, but it cannot be expected to function effectively without an adequate budget.

Mr Director-General,
Distinguished Delegates,

I should not like to miss this opportunity of making a number of comments on the Commission in the light of the experience I have gained during my term of office as Chairman.

The IOC has been criticized from time to time for not having a programme, for achieving too little and for being inefficient. I do not agree with this criticism and I think we are underrating our own endeavours. To my mind, the IOC, with its 108 Member States and twenty years' experience, is a complex organization, approaching maturity, very heterogeneous by virtue of the diversity of its Member States and with a great many areas of activity, all equally important--it is engaged in the promotion of the marine sciences; the co-ordination of research programmes; and the provision of oceanic services; it acts as a mechanism for raising the scientific level of developing countries and for promoting training, education and mutual assistance; as a forum for communication and dialogue between countries; as a centre ensuring liaison with other organizations; and as a catalysing agent and a multiplier of resources.

As a result of all this, it has come to occupy an important and soundly established position in the domain of marine scientific research within the United Nations system.

It is far from being a mere instrument for co-ordinating expeditions and in fact is providing its Member States, both industrialized and developing, with a wide range of opportunities, although, admittedly, a great deal still remains to be done.

I wish to thank the four Vice-Chairmen with whom I have worked as a team-member and to make special mention of the valiant work done by the Secretary in preparing this Assembly under great pressure and in the face of the very serious problems involved in processing the documentation which, in your opinion, distinguished delegates, has been excellent and shows the Organization's ability to cope almost simultaneously with two major meetings, this Assembly and the extraordinary General Conference, which starts on 23 November.

In conclusion, Mr Director-General and distinguished delegates, I should like to say that with the signing of the United Nations Convention on the Law of the Sea a historic stage in the development of international law, unprecedented

in terms of oceanic affairs, has come to an end and another is beginning, in which countries will have to adjust existing structures and national legislation and the United Nations will have to take all necessary steps to implement the Convention.

Similarly, with this Twelfth Assembly of the IOC a cycle of planning and consolidation has come to a close and one of execution and practical action is beginning, during which the Commission will have to decide on its objectives, functions and structure, in the light of the wishes of its member countries, in order to accomplish effectively the tasks that have been assigned to it, ensuring greater participation on the part of Member States and equipping itself to make a fitting response to the demands of other agencies and of the Convention itself. This is how we shall build up the future of the IOC. I am confident that having regard to the technical character we have given the Commission, the restoration of confidence between Member States and in relation to Unesco and the constructive spirit of harmony in which we have worked during the past few years, this meeting will yield fruitful results.

I should like once again, Mr Director-General, to thank you for honouring us with your presence today.

E. STATEMENT BY PROFESSOR ROGER REVELLE ON OCEANOGRAPHY IN THE WORLD CLIMATE RESEARCH PROGRAMME

5 November 1982

The Eleventh Assembly of the IOC charged the Joint SCOR/IOC Committee on Climatic Changes and the Ocean (CCCO) to take the lead in recommending and developing components, programmes and arrangements necessary for the oceanographic portion of climatic programmes, including:

> definition of the oceanographic experiments necessary for atmospheric and oceanic climate research, as well as identification and development of requirements for long-term ocean monitoring.

The Committee was requested to undertake these tasks in collaboration with the Joint Scientific Committee for the World Climate Research Programme of the World Meteorological Organization and the International Council of Scientific Unions.

The IOC Executive Council also requested the CCCO to study the feasibility of starting an ocean monitoring programme for climatic purposes in selected geographic areas. In carrying out this task the Committee should:

> Develop the scientific basis for the ocean monitoring programme;
>
> Specify the requirements for accuracy and precision of the observations and the time and space frequency of sampling;
>
> Examine the use of different kinds of ocean measuring platforms; for example, ships-of-opportunity and moored and drifting buoys;
>
> Develop plans in co-operation with IGOSS and IODE for collection, exchange, dissemination and analysis of climate-related oceanographic data.

In accordance with these recommendations of IOC, the CCCO has begun to develop what I believe will be an exciting programme, which in the long run should be of great benefit to many countries. Equally important, all of the Member States of IOC should be able to participate in, and make meaningful contributions to, ocean measurements that are the essential basis of the proposed studies. To assist in the development of our programme we have held a series of international conferences, usually in co-operation with the JSC: (1) on time series of ocean measurements; (2) on the use of satellites in observing the oceans; (3) on an action programme for ocean monitoring; (4) on measurements and use of mean sea level; (5) and most important of all, a Joint Study Conference held in Tokyo last May on Large-Scale Oceanographic Experiments for the World Climate Research Programme. These international conferences were supplemented by meetings of panels and working groups and of the Committee itself.

The Tokyo Study Conference, in which there were eighty-one physical oceanographers and meteorologists from all parts of the world, lasted for two weeks. It was perhaps the best physical oceanographic meeting ever held. One way to demonstrate this is that I, as an old-fashioned oceanographer, was able to understand only about 20% of the papers presented at the Conference and the accompanying discussion. Great credit should go to the IOC for its support, to the Secretary of the CCCO, Mr Bertrand Thompson, and the scientific organizers for this remarkably productive meeting.

The preliminary report of the Study Conference is in your packet of papers for this General Assembly, No. IOC/INF/507. Briefly summarized it proposes two oceanographic operations of a larger scale and greater complexity than any ever before attempted--A World Ocean Circulation Experiment, called WOCE for short; and a study of Tropical Oceans and Their Interaction with the Global Atmosphere, called TOGA.

The purpose of WOCE is threefold:

(1) To obtain for the first time a first order picture or description of the general circulation of the world ocean, the relationships between horizontal and vertical motions throughout the interconnected waters of Earth's great water body, the transformation of water masses; and the order of magnitude of year-to-year variations in currents and water mass characteristics.

(2) To gain a greater understanding of the transport of heat between low and high latitudes by the ocean waters and the related exchange of latent and sensible heat and radiation between the air and the sea; the programmes we have called CAGE and PATHS for the comparative measurement of ocean heat transport in the North Atlantic and North Pacific would be one phase of the World Ocean Circulation Experiment.

(3) To obtain data for the construction and verification of coupled ocean-atmosphere models of the general circulation of the ocean-atmosphere system.

One of the striking events of the last three years has been the realization that variations from year to year in the tropical oceans and the overlying atmosphere are related to world-wide climatic changes in middle and high latitudes as well as to climatic events on land in low latitudes. These relationships are apparently due to the propagation of planetary Rossby waves in the atmosphere between the tropics and higher latitudes. The so-called teleconnections in the tropical atmosphere were first noted and described by the great British meteorologist,

Sir Gilbert Walker. He called them the Southern Oscillation. They are characterized by the fact that when the atmospheric pressure is high in Northern and Western Australia it is low on the South American coast. Walker and other observers of the Southern Oscillation were puzzled by the peristence of these atmospheric variations. Later workers, particularly Jack Bjerknes and Klaus Wyrkti, showed that the atmospheric pressure differences are closely related to changes in the subsurface ocean temperature and sea level in the islands of the Equatorial Pacific. In other words, the ocean provides the memory in the system which allows the atmospheric changes to persist. The atmospheric teleconnections and the resulting ocean events are believed to extend throughout the Indian Ocean to the east coast of Africa and may be important factors in the variable strength of the Indian Monsoon. They may also extend to the tropical Atlantic as far as the African coast. Warm sea-surface temperatures in the tropical Atlantic are associated with droughts in North-East Brazil and anomalously warm western Pacific waters are related to droughts in China.

In these interrelated events we have a most convincing case for the role of the ocean in year-to-year and possibly decade-to-decade climatic variations. One of the outstanding Southern Oscillation events is the occurrence from time to time of 'El Nino' near the coasts of Ecuador, Peru and Chile. Warm water from the Equatorial Pacific floods over the colder upwelling waters of the Peru current, often causing anoxic conditions and disastrous fish kills.

'El Nino' is preceded by a piling up of warm water in the central and western Pacific which then travels eastward along the Equator as a planetary wave called a Kelvin wave. This piling up of water is apparently caused by an intensification of the trade winds. But what causes the trade winds to intensify? It is believed that this is related to heating of the surface ocean layers in the western Pacific which in turn seems to be related to convergence in the West Pacific winds. We can almost think of the sequence of events as a chicken and egg process between the ocean and the atmosphere. Perhaps one stage further back in the process is the degree of cloudiness over the ocean in the region of New Guinea and Indonesia which affects the solar radiation received by the ocean. But the important thing to keep in mind is that the ocean provides the memory for the system.

Figure 9 on page 11 of the Report of the Study Conference on Large-Scale Oceanographic Experiments in the World Climate Research Programme shows that 'El Nino' events in the eastern Pacific are commonly followed by catastrophic droughts or anomalously low monsoon rainfall over India.

Several countries are developing observing and modelling programmes, which are being co-ordinated internationally by panels of CCCO, in different regions of the equatorial ocean: in the Atlantic, France, the USSR, the German Democratic Republic, the United States of America, the United Kingdom and Brazil, in the equatorial Pacific, the South American countries, the United States of America, Japan, France and perhaps others. We have organized a panel for the Indian Ocean under the chairmanship of the distinguished French oceanographer, Michèle Fieux, and we hope to involve Australia, India, France and the Indian Ocean border countries in this phase of the total programme.

There is a need for analytical and simulation models in TOGA, as well as in WOCE, to guide observing programmes and to facilitate analysis of data. Such modelling is being fostered by the CCCO Modelling Panel and the Working Group on Numerical Experimentation of the Joint Scientific Committee for the WCRP.

Like most advances in oceanography, the great oceanographic experiments I have described will depend on the use of a combination of new and old technologies: satellites for measurements of sea-surface temperature, wind stress and direction, and ocean-surface topography, as well as for locating and tracking drifting buoys and transmitting signals from buoys and other observing platforms; expendable BTs and conductivity/depth/temperature recorders; drifting and moored buoys: and acoustic tomography, a new technique utilizing the remarkable properties of sound in seawater. The principal use of ocean research ships will be to take deep hydrographic casts and to follow the sinking of water masses by geochemical tracers. For several purposes, the most useful instruments will be tide gauges installed on open coasts and on islands and used to measure not tides but monthly variations of mean sea level.

The ocean-observing satellites will not be available until the later years of the 1980s. But prior to that time much can and must be done. For example, in the early stages of TOGA, essential observations of currents, water properties, and meteorological parameters can be carried out using drifting and moored buoys, XBTs, XCTDs, surface ships, tide gauges and meteorological observing stations. The weekly or monthly mean sea-level values from tide gauges can be interpreted directly as variations in the strength of geostrophic currents as well as in the depth of the warm-water layer beneath the surface.

The mean sea-level measurements should be supplemented by measurements of surface and subsurface temperatures and salinities in the general region where the tide gauge is installed. Operation of one or more tide gauges and the making of the related temperature and salinity measurements should be feasible for most Member States of the IOC. These observations should be especially useful to developing countries in helping them to understand the ocean variations off their coasts which affect fisheries and marine resources. For example, the precursor stages of an El Nino have apparently been occurring during the past few months in the central Pacific. If the sequence of events in this phenomenon can be carefully followed by a proper set of mean sea-level and surface and subsurface temperature observations, fisheries planning for Ecuador, Peru and Chile should be facilitated.

The variability of the ocean in time and space is the third leg of our tripod of oceanographic activities in support of the WCRP. Here we are concerned with exploratory time series of ocean measurements lasting over five to ten years to determine the first order statistics of ocean variability; and with continuing time series covering many years to monitor ocean conditions in climatically critical areas.

Both exploratory and monitoring time series are usually carried out as parts of national oceanographic programmes, undertaken for a variety of purposes, including inter alia, weather and climate forecasting, and gaining greater understanding of time and space fluctuations in fisheries. The SECTIONS programme of the USSR, the Japanese hydrographic sections along the meridian of 137°E, which have been repeated for many years, the detailed Japanese studies of the Kuroshio region, and the American Transpac XBT surveys are examples. Several time-series programmes are undertaken co-operatively between two or more countries, as illustrated by the collaboration in the SECTIONS programme of the GDR, Pacific XBT surveys by the French oceanographers in Noumea, and by the time series of hydrographic observations over many years carried out by the International Council for the Exploration of the Seas.

There are obviously very large gaps in the coverage of the world ocean by present time series, particularly in the Indian, South Atlantic and South Pacific oceans, and many more Member States of IOC need to undertake observations of this kind to gain understanding of the fluctuations in ocean conditions affecting the living resources under their jurisdiction as well as to contribute to the WCRP.

Installation and long-term operation of tide gauges on open coasts and islands to measure not tide but fluctuations in mean sea-level should be both feasible and useful for many coastal states to give them an integrated indication of fluctuations in ocean conditions within the Exclusive Economic Zones established by the United Nations Convention on the Law of the Sea. These time series of mean sea-level observations should be supplemented wherever possible by measurements of sea-surface temperature and salinity, and surface wind and other meteorological parameters.

New time series of XBT Sections in the Indian and Atlantic Oceans using fleets of opportunity on established sea routes would be highly desirable and are being contemplated by Member States.

In co-operation with the JSC, the CCCO has developed an Action Plan for an Ocean Observing System (document IOC-XII/8 Annex 4) which calls for the implementation of observations programmes in the framework of IGOSS and IODE. The Action Plan emphasizes the need for establishing criteria for calibration, reliability and accuracy, the problem of data processing, assimilation and timely distribution for use in model studies and problems of cost effectiveness and sustainability in the development of a world ocean monitoring system for climate purposes.

ANNEX IV

A. List of IOC Member States (as at 15 November 1982)

B. Officers of the Commission (as from 20 November 1982)

C. State-member Representatives in the Executive Council (as from 20 November 1982)

A. LIST OF IOC MEMBER STATES (as at 15 November 1982)*

ALGERIA
ANGOLA (PEOPLE'S REP.)
ARGENTINA
AUSTRALIA
Austria
Bahamas
Bangladesh (People's Rep.)
Belgium
BRAZIL
Bulgaria
Cameroon
CANADA
Chile
CHINA
Colombia
Congo
COSTA RICA
Cuba
Cyprus
Denmark
Dominican Republic
Ecuador
EGYPT, ARAB REPUBLIC OF
Ethiopia
Fiji
Finland
FRANCE
Gabon
GERMAN DEMOCRATIC REPUBLIC
GERMANY, FEDERAL REPUBLIC OF
Ghana
Greece
Guatemala
Guinea
Guyana
Haiti
Iceland
INDIA
INDONESIA
Iran
IRAQ
Ireland
Israel
ITALY
Ivory Coast
Jamaica
JAPAN
JORDAN
KENYA
Korea, Democratic People's Republic of
Korea, Republic of
Kuwait
Lebanon
Libyan Arab Jamahiriya
Madagascar
Malaysia
Malta
Mauritania, Islamic Republic of
Mauritius
MEXICO
Monaco
Morocco
Mozambique
NETHERLANDS
New Zealand
Nicaragua
NIGERIA
Norway
Oman
Pakistan
Panama
PERU
PHILIPPINES
Poland
Portugal
Qatar
Romania
Saudi Arabia
SENEGAL
Seychelles
Sierra Leone
Singapore
Solomon Islands
Somalia
South Africa, Republic of (suspended)
SPAIN
Sri Lanka
Sudan
Surinam
SWEDEN
Switzerland
Syrian Arab Republic
Tanzania, United Republic of
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
TURKEY
Ukrainian SSR
UNION OF SOVIET SOCIALIST REPUBLICS
United Arab Emirates
UNITED KINGDOM
UNITED STATES OF AMERICA
Uruguay
VENEZUELA
Vietnam, Socialist Republic of
Western Samoa
Yemen, Republic of
Yugoslavia

(Total: 110 members)

* Members of the Executive Council appear in capital letters

B. OFFICERS OF THE COMMISSION (as from 20 November 1982)

Chairman

Prof. I.A. Ronquillo
Chief, Division of Research
Bureau of Fisheries and Aquatic Resources
P.O. Box 623
Manila
Philippines

(Tel. 98-70-51
Telex: 2566 BFAR-PU/RONQUILIO
Cable: Fisheries Bureau--Manila)

First Vice-Chairman

Miss M.A. Martin-Sané
Coordinateur multilatéral
Direction Générale des Relations
Culturelles, Scientifiques et
Techniques (DGRCST)
Ministère des Relations Extérieures
34, rue La Pérouse
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France

(Tel.: 502.14.23, extension 45.85)

Second Vice-Chairman

Prof. Dr A.R. Bayoumi
Director, Institute of Oceanography
and Fisheries
Academy of Scientific Research and
Technology
101, Kasr El-Ainy Street
Cairo
Egypt

(Tel.: 31780 or 31381
Telex: 93069 ASRT-UN
Cable: INOFISH CAIRO)

Third Vice-Chairman

Dr J.A. Galavis-Seidel
Geólogo Jefe II-Asesor
Ministerio de Energía y Minas
Dirección de Geología
Torre Norte - Piso 19 CSB
Caracas
Venezuela

(Tel.: 41.64.60
Cable: DIREGEOL-CARACAS or MINIMINAS
CARACAS)

Fourth Vice-Chairman

Prof. Dr sc. Klaus Voigt
Director
Institut für Meereskunde der Akademie
der Wissenschaften der DDR
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German Democratic Republic

(Tel.: 58288 or 58289
Telex: 31133 ifm dd)

Secretary

Dr Mario Ruivo
Intergovernmental Oceanographic
Commission
Unesco
Place de Fontenoy
75700 Paris
France

(Tel.: 577.16.10, extension 60.74
Telex: 204461 Paris
Cable: Unesco Paris)

C. STATE-MEMBER REPRESENTATIVES ON THE EXECUTIVE COUNCIL (as from 20 November 1982)

I. A. Ronquillo	Philippines (Chairman)
M.A. Martin-Sané	France (First Vice-Chairman)
A. R. Bayoumi	Egypt (Second Vice-Chairman)
J.A. Galavis-Seidel	Venezuela (Third Vice-Chairman)
K. Voigt	German Democratic Republic (Fourth Vice-Chairman)
A. Chouikhi	Algeria
D. Van-Dunem	Angola
F. Vila	Argentina
D.G. Keeley	Australia
V. Lisieux Medeiros de Figueiredo	Brazil
N.J. Campbell	Canada
Luo Yuru	China
M. M. Murillo	Costa Rica
G. Hempel	Germany, Federal Republic of
V.V.R. Varadachari	India
A. Soegiarto	Indonesia
N.A. Hussain	Iraq
C. Morelli	Italy
N. Nasu	Japan
A. Badran	Jordan
S. O'Allela	Kenya
A. Ayala-Castañares	Mexico
T.F. Groustra-de-Kat	Netherlands
J.G. Tobor	Nigeria
J.M. Bakula	Peru
D.Y. Kane	Senegal
M. Oliver Massuti	Spain
J.-O. Strömberg	Sweden
T.I. Balkas	Turkey
R.J.H. Beverton	United Kingdom
E.I. Tolstikov	Union of Soviet Socialist Republics
J.V. Byrne	United States of America

ANNEX V

GUIDELINES FOR THE STRUCTURE
AND RESPONSIBILITIES OF IOC

1. Basic function

1.1 Regional subcommissions are intergovernmental subsidiary bodies of the Commission, responsible for the promotion, development and co-ordination of the marine scientific research programmes, the ocean services, and related activities, including TEMA, in their respective regions. In establishing their programmes, they should take into account the specific interests and needs of the Member States in the region. In carrying out the above work, it is mandatory that the regional subcommissions collaborate closely with IOC's subsidiary bodies concerned with global activities, within their fields of competence.

1.2 Regional subcommissions shall operate within the framework of the general policy of the Commission and the budgetary guidelines and allocations established by the Assembly.

1.3 Regional subcommissions shall be established by the Assembly only at the request of Member States in the region, taking into account at least the following basic conditions:

(i) an existing regional subsidiary body of the Commission has formally requested the Assembly to designate it as a regional subcommission;

(ii) the budget and secretariat required for the effective functioning of the proposed regional subcommission will be made available;

(iii) the Member States of the region for which a regional subcommission is proposed are already actively engaged in co-operative activities or have demonstrated their commitment to do so.

2. Basic terms of reference

Regional subcommissions shall:

(i) define regional problems the solution of which calls for international co-operation, and promote, develop and co-ordinate the required marine scientific research programmes and related activities;

(ii) implement and co-ordinate the regional components of global marine scientific research programmes and activities of the Commission;

(iii) promote the development and use, at regional level, of ocean services and related supporting activities, co-ordinated or maintained by the Commission;

(iv) facilitate the exchange of scientific data and information, and the transfer of knowlege resulting from marine scientific research, especially to developing countries in the region;

(v) assist with the identification of training, education and mutual assistance needs in the region, particularly those relating to the programmes of the regional subcommission, and promote the required TEMA activities;

(vi) make recommendations to the governing bodies of the Commission on policy matters, and submit proposals on the budgetary and other forms of support required for the programme of work of the regional subcommission; co-operate with other subsidiary bodies of the Commission on technical matters of common interest;

(vii) provide general guidance and serve as a mechanism for Member States, for the formulation, evaluation and follow-up of proposals for extra-budgetary projects aimed at strengthening national capabilities in marine scientific research and the establishment of common institutions, services and facilities (e.g. centres, networks);

(viii) co-operate with the regional subsidiary bodies of the United Nations organizations members of ICSPRO and of other United Nations organizations as well as regional bodies collaborating with the Commission;

(ix) regional subcommissions have the right, provided that no costs fall on the Commission or have been approved by a governing body, to: (i) form task teams to carry out specific assignments; (ii) establish groups of experts; and (iii) organize technical meetings (e.g. workshops), provided costs fall within the budget allocated to them or extra-budgetary funding is available for that purpose; otherwise recommendations to that effect shall be submitted to the governing bodies of the Commission for their consideration and approval.

3. Region

The region (geographical area of each regional subcommission) shall be determined by the Commission, giving due regard to the views of the Member States concerned, particularly those of the region being considered for regional subcommission status.

4. Membership

Membership of each regional subcommission shall be open to all interested Member States of the Commission willing to participate actively in the work of the regional subcommission.

Member States shall acquire membership of each regional subcommission by notifying the Secretary of the Commission.

Members of regional subcommissions shall each appoint a national representative to act as focal point in their countries for each regional subcommission, and are invited to appoint, as required, other formal contacts.

5. Meetings

Each regional subcommission should meet once during each budgetary biennium unless otherwise decided by the regional subcommission with the approval of a governing body of the Commission.

Meetings (time and place) of each regional subcommission and of its task teams, etc., if any, shall be decided by the regional subcommission, but only after consultation with the Secretary of the Commission if there are budgetary implications.

6. Officers

A regional subcommission shall elect its Chairman and a Vice-Chairman from a Member State in the region. They will serve for two sessions and two intersessional periods and may be re-elected for one additional term of office.

7. Secretariat support

Secretariat support for the regional subcommission shall be provided by the IOC Secretariat (headquarters staff and staff outposted in the region), and by Member States.

8. Location of the secretariat staff

The outposted IOC staff provided secretariat services to a regional subcommission shall be located in an appropriate office of Unesco or of any organization of the United Nations system in the region of the regional subcommission, or elsewhere in a Member States of the region, provided that such a state offers facilities considered adequate by the regional subcommission and approved by a governing body of the Commission.

9. Financial arrangements and support in kind

The programme and activities of a regional subcommission shall be carried out within the budgetary allocations established by the Commission, or from such additional resources and support in kind as may be made available by Unesco or by other organizations members of ICSPRO, or by any other United Nations organizations cooperating with the Commission, or by Member States of the Commission, or as may be received from other sources in accordance with the financial rules of the Commission.

Voluntary contributions earmarked specifically for the programme and activities of a regional subcommission may be accepted and established under the IOC Trust Fund in accordance with the financial regulations of Unesco and the IOC and administered by the Secretary of the Commission.

ANNEX VI

ANTON BRUUN MEMORIAL LECTURES 1982 (abstracts)

Wednesday, 10 November 1982

OCEAN SCIENCE FOR THE YEAR 2000

(Chairman: Dr Neil J. Campbell, First Vice-Chairman, IOC)

Dr M. Talwani (United States of America)	Future Research on the Ocean Floor and What Lies Beneath It
Prof. Dr K. Hasselmann (Germany, Federal Republic of)	Future Research in Physical Oceanography and Climate
Prof. Dr D. Dyrssen (Sweden)	Future Research in Ocean Chemistry
Dr M.V. Angel (United Kingdom)	Future Research in Biological Oceanography

FUTURE RESEARCH ON THE OCEAN FLOOR AND WHAT LIES BENEATH IT

by Dr M. Talwani
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Pearl River
New York, U.S.A. 10965

Research in marine geology and geophysics--exploration of the floor of the ocean and what lies beneath it--will be full of excitement in the coming decades. There are challenging scientific problems which are sure to attract the best scientific minds, and the research has important practical uses which should ensure its financial support. Among the research problems that will engage the scientists are:

the geological structure and history of continental margins, particularly with a view to exploration for hydrocarbons;

the study of 'active' continental margins, the causes of earthquakes, volcanic eruptions and other natural hazards and their prediction;

the study of processes at the mid-ocean ridges by which new crust is produced, and the generation of metallic ores at these locations;

the study of the deep ocean floor, the study of manganese nodules that lie on it and consideration of the possibility of using the deep ocean as a site of radioactive waste disposal;

the study of sediments on the continental slopes and the suitability of such areas for locating man-made structures on the ocean bottom;

the study of sedimentary layering at the ocean bottom and the derivation from it of past climatic succession and the prediction of climatic variations in the future.

For many of the studies mentioned above, the development of new technology and the deployment of present technology in large unexplored parts of the ocean is essential. The history of marine geology reveals that most major advances have resulted directly from major technological advances and that connection is certain to continue to exist in the future.

FUTURE RESEARCH IN PHYSICAL OCEANOGRAPHY AND CLIMATE

by Prof. Dr K. Hasselmann
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Understanding the role of the oceans in climate has been repeatedly stressed as one of the most urgent priorities of the World Climate Research Programme. An attack on this problem requires a new approach to ocean modelling and a long-term ocean measurement strategy. This in turn must be guided by the models. New techniques for remote sensing of the ocean from satellites could aid significantly in a global ocean measurement strategy. However, an optimal sampling strategy for long-term ocean measurements based on a combined system of conventional instruments and satellites has yet to be defined. The problems are discussed and illustrated with some results from an ocean climate model.

FUTURE RESEARCH IN OCEAN CHEMISTRY

by Prof. David Dyrssen
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Sweden

Marine chemistry deals with seawater as a medium for chemical reactions and their dependence on pressure and temperature. Chemical oceanography is concerned with the distribution of seawater constituents. This distribution is not only governed by general chemical relationships (laws), but to an equally great extent by biological, geological and mixing processes. The study of ocean chemistry has, therefore, not only a great impact on ocean sciences, including the best use of ocean resources, but may also increase our basic knowledge of chemistry and natural products.

Pollution research during the last decade has deepened our understanding of essential natural processes and pathways of different elements and substances in the sea. At the same time, our ability to evaluate and cope with pollution hazards has been improved. Pollutant measurements will certainly also be carried out during the next two decades. The sampling and analytical capabilities have improved considerably during the last decade and will continue to do so. The advance of our knowledge of the chemistry of the oceans will depend on the ability of the oceanographers to use up-to-date knowledge in different branches of chemistry and maintain an analytical capability by continual upgrading and incorporation of new techniques. The most advanced computerized techniques are costly, which calls for the establishment of a few well-equipped international laboratories. The sites of these laboratories should cover economically important areas, and they should also provide training courses for advanced research in ocean science for the benefit of all nations. In addition, research vessels should be designed with clean sampling areas and clean-air laboratories that can accommodate advanced instrumentation and allow first-rate trace chemistry work on board.

FUTURE RESEARCH IN BIOLOGICAL OCEANOGRAPHY

by Dr M.V. Angel
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Wormley, Godalming, Surrey, United Kingdom

There are three main objectives for the sensible and rational use of the oceans: firstly, to protect the processes which maintain life in the oceans; secondly, to manage its renewable resources so that they sustain maximum yields; and thirdly, the maintenance of genetic diversity. To attain these objectives biological oceanography needs to develop a predictive capability. It needs to pass through three main phases: (a) descriptive; what occurs where? (b) functional understanding; how does the ecosystem function and how fast are the processes taking place? and (c) predictive understanding, the development of a body of theoretical knowledge that can be used to predict the short- and longer term effects of natural and man-made perturbations of the system.

Biological oceanography faces a range of problems; some, but not all, in common with other branches of oceanography. There is the shear volume of the oceans, the complexity of biological systems, the dependence of biological work on a fundamental understanding of physical and chemical processes which force many of the biological responses, and the slowness with which biological sampling is converted into data.

There are five main areas where advances are needed: (a) the understanding of lower food-web dynamics, particularly in the measurement of primary production, the appreciation of the significance of primary production by nano- and pico-phytoplankton, and the role played by micro-organisms and microzooplankton; (b) higher food-web dynamics, how food webs are structured, and how energy, nutrients and organic material flow and cycle through food webs; (c) how ecosystems function as a whole, to establish how experience and knowledge gained from one system can be applied or extrapolated to others; (d) the importance of time/space scales in influencing our concepts of oceanic ecosystems function; is it possible to extrapolate from scales that relate to an individual organism's ambit or life expectancy to those that reflect year-to-year or longer term climatic or geological time-scale variations? A trend at one scale may be merely noise at a larger or longer scale; (e) the special problems of coastal ecosystems which are the main interface between the oceans and man's exploitation for food, transport, disposal of waste, recreation, energy, minerals and land reclamation; these problems are highlighted by the designation of E.E.Z.'s giving management of ocean resources to coastal states which lack the skilled manpower and research resources they need, to avoid making the same mistakes made by the states whose rapid industrial development outstripped their marine management skills.

The development of interdisciplinary interaction within oceanography is proving to be a real stimulus to scientific advance. Biological oceanography is providing important contributions to general biological knowledge and theory. It also offers the best potential source of information on the factors controlling recruitment to fish stocks; our inability to predict recruitment is the major stumbling block to our efforts to manage these stocks effectively.

Advances in science are very much dependent on advances in technology. Biological oceanography is inhibited by the inadequacy of techniques for measuring primary

productivity, pelagic and benthic sampling, the capture and maintenance of living oceanic organisms, the conversion of samples into data, and the management and dissemination of the data. Much of this technology is relatively trivial compared with the technology required for the Big Sciences of astronomy, fundamental physics, and defence science. Yet, in the long term, mankind is more likely to survive on this, our only planet, because of the advances in biological oceanography, than anything achieved in the more spectacular sciences.

ANNEX VII/ANNEXE VII/ANEXO VII/ПРИЛОЖЕНИЕ VII/ الملحق السابع / 附 件 VII

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ادرجت الأسماء والألقاب في هذه القائمة كما قدمتها للسكرتارية الوفود المعنية ، ورتبت أسماء البلاد بحسب الترتيب الهجائي الانجليزي

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КОНСУЛЬТАТИВНЫЕ ОРГАНЫ МОК/
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ANNEX VIII

LIST OF ACRONYMS AND ABBREVIATIONS

ACMRR (of FAO)	Advisory Committee on Marine Resrouces Research
ACOMR (of WMO)	Advisory Committee on Oceanic Meteorological Research
ALECSO	Arab Educational, Cultural and Scientific Organization
BATHY/TESAC (of IGOSS)	Bathythermograph Report/ Temperature, Salinity, Currents
CARIPOL (of IOCARIBE)	Pollution Monitoring Programme
CCCO (of SCOR/IOC)	Joint SCOR/IOC Committee on Climatic Changes and the Ocean
CCOP (of ESCAP)	Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas
CCOP-SOPAC (of ESCAP)	Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Offshore Areas
CICAR (of IOC)	Co-operative Investigations of the Caribbean and Adjacent Regions
CINCWIO (of IOC)	Co-operative Investigations in the North and Central Western Indian Ocean
CINDIO (of IOC)	Central Indian Ocean
CLIVA (of Portugal)	Climate and Variability of the N.E. Atlantic
COST-43	European Co-operation in the field of Scientific and Technical Research - project 43
CPPS	Comisión Permanente del Pacífico Sur
DNA (of IOC)	Designated National Agency
ECA (of UN)	Economic Commission for Africa
ECOR	Engineering Committee on Oceanic Resources
ECOSOC (of UN)	Economic and Social Council
ENSO (of U.S.A.)	An Ocean-Atmosphere Interaction Study : El Niño and the Southern Oscillation
EPOCS	Equatorial Pacific Ocean Climate Studies
ERFEN (of CPPS)	Estudio Regional del Fenómeno "El Niño" (Regional study of the phenomenon known as "El Niño")
FAGS	Federation of Astronomical and Geophysical Services

FAO	Food and Agriculture Organization of the United Nations
FGGE (of GARP)	First GARP Global Experiment
FOCAL (of France)	Français Océan et Climat de l'Atlantique Equatorial
FORE (of SCOR/IOC/Unesco)	Future Ocean Research
FUROF (of IOC)	Future Role and Functions of the Commission; Working Group on FUROF
GARP (of WMO/ICSU)	Global Atmospheric Research Programme
GEBCO (of IOC/IHO)	General Bathymetric Chart of the Oceans Joint IOC/IHO Guiding Committee for GEBCO
GEEP (of GIPME)	GIPME Group of Experts on the Effects of Pollutants
GEMSI (of GIPME)	GIPME Group of Experts on Methods, Standards and Intercalibration
GESAMP (of IMO/FAO/Unesco/ WMO/WHO/IAEA/UN/UNEP)	Group of Experts on the Scientific Aspects of Marine Pollution
GF-3 (of IOC)	IOC General Format No. 3 (General Oceanographic Data Exchange Format)
GIPME (of IOC)	Global Investigation of Pollution in the Marine Environment; Working Committee for GIPME
GTS (of WMO/WWW)	Global Telecommunication System
HAIKU (of Japan)	Heat Advection Investigation in the East Kuroshio
IABO (of IUBS)	International Association for Biological Oceanography
IAEA	International Atomic Energy Agency
IAPSO (of IUGG)	International Association for the Physical Sciences of the Ocean
IBCM (of IOC)	International Bathymetric Chart of the Mediterranean
ICES	International Council for the Exploration of the Sea
ICG (of IOC)	International Co-ordination (or Co-ordinating) Group
ICITA (of IOC)	International Co-operative Investigations of the Tropical Atlantic
ICSEM	International Commission for the Scientific Exploration of the Mediterranean Sea
ICSPRO (of FAO/IMO/Unesco/ WMO/UN)	Inter-secretariat Committee on Scientific Programmes Relating to Oceanography
ICSU	International Council of Scientific Unions

IGOSS (of IOC/WMO)	Integrated Global Ocean Station System; Joint IOC/WMO Working Committee for IGOSS
IHO	International Hydrographic Organization
IIOE (of IOC)	International Indian Ocean Expedition
IMO	International Maritime Organization
INFOCLIMA (of WMO)	World Climate Programme Data Referral System
IOC	Intergovernmental Oceanographic Commission
IOCARIBE (of IOC)	IOC Sub-commission for the Caribbean and Adjacent Regions
IODE (of IOC)	International Oceanographic Data Exchange
IREP (of OSLR)	International Recruitment Programme
IREX (of OSLR)	International Recruitment Experiment
ITIC (of ITSU)	International Tsunami Information Center
ITSU (of IOC)	IOC Tsunami Warning System in the Pacific; International Co-ordination Group for the Tsunami Warning System in the Pacific
IUGG (of ICSU)	International Union of Geodesy and Geophysics
JSC (of WMO/ICSU)	Joint Scientific Committee
LEPOR (of IOC)	Long-term and Expanded Programme of Oceanic exploration and Research
LUT	Local User Terminal
MARPOLMON (of IOC)	Marine Pollution Monitoring
MEDI (of IOC)	Marine Environmental Data Information Referral System
NODC	National Oceanographic Data Centre
NORPAX	North Pacific Experiment
NTC (of IOC)	National Training Contacts
OACIS (of USA)	Ocean Atmosphere Climate Interaction Studies
OCE (of Unesco)	Division of Marine Sciences
ODAS (of IMO/Unesco)	Ocean Data Aquisition Systems, Aids and Devices
OHTEX (of Japan)	Ocean Heat Transport Experiment
OMLET (of Japan)	Ocean Mixed Layer Experiment

OPS (of Unesco)	Operational Programmes Division
OSCOM/PARCOM	Oslo and Paris Commissions
OSLR (of IOC)	Ocean Science in relation to Living Resources
OSNLR (of IOC)	Ocean Science in relation to Non-living Resources
PEQUOD (of USA)	Pacific Equatorial Ocean Dynamics
PERGSA	Red Sea and Gulf of Aden Environmental Programme
PSA	Pacific Science Association
RNODC	Responsible National Oceanographic Data Centre
ROSTA (of Unesco)	Regional Office of Science and Technology for Africa
ROSTSEA (of Unesco)	Regional Office of Science and Technology for Southeast Asia
SCOR (of ICSU)	Scientific Committee on Oceanic Research
SEATAR (of CCOP-IOC)	CCOP-IOC Joint Working Group on post-IDOE Studies on East Asia Tectonics and Resources
SECTIONS (of USSR, Poland, Bulgaria, GDR)	Energetically Active Zones of the Ocean (EAZO) and Climate Variability
SEQUAL (of USA)	Seasonal Equatorial Atlantic Experiment
SIDA	Swedish International Development Authority
SINODE (of France)	Surface Indian Ocean Dynamic Experiment
SOC (of IOC)	Southern Oceans; Programme Group for the Southern Oceans
STACS (of USA)	Subtropical Atlantic Climate Studies
STAR (of CCOP-SOPAC)	Working Group on Southeast Asia Tectonics and Resources
SWMTEP (of UNEP)	System-Wide Medium-Term Environment Programme
TEMA (of IOC)	Training, Education and Mutual Assistance in the marine sciences; IOC Working Committee for TEMA
TOGA	Tropical Oceans and the Global Atmosphere
TOPOGULF (of France)	Effects of the Mid-Atlantic Ridge upon the General Circulation and its Transients at Mid-Latitude
TRANSPAC (of Japan, USA)	North Pacific Ocean Monitoring (XBT) for Climate Research
TROPIC HEAT (of USA)	Tropical Pacific Upper Ocean Heat and Mass Budgets
TTO (of USA)	Transit Tracers in the Ocean

UN	United Nations
UN(OETB)	UN Ocean Economics and Technology Branch
UNCLOS (of UN)	United Nations Conference on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCRP (of WMO/ICSU)	World Climate Research Programme
WDC	World Data Centre
WESTPAC (of IOC)	Western Pacific; Programme Group for the Western Pacific
WHO	World Health Organization
WMO	World Meteorological Organization
WOCE	World Ocean Circulation Experiment
XBT	Expendable Bathythermograph

The Intergovernmental Oceanographic Commission consists of an Assembly, an Executive Council, a Secretariat and such subsidiary bodies as it may establish.

(Statutes, Article 4.4)

The Assembly, which is the principal organ of the Commission, is responsible for making all decisions necessary to accomplish the purpose of the Commission. Sessions of the Assembly are held every two years and may by right be attended by delegates from all Member States of the Commission.

The Executive Council, which meets approximately annually, is required to exercise the responsibilities delegated to it by the Assembly and act on its behalf in the implementation of its decisions. The Executive Council consists of the Chairman of the Commission, the four Vice-Chairmen and representatives from a number of Member States elected at the end of the previous session of the Assembly.

The Secretariat, which is housed in Unesco Headquarters, Paris, consists of the Secretary and a number of Assistant Secretaries/Programme Specialists. Certain of the Assistant Secretaries are seconded to the Secretariat by Specialized Agencies of the United Nations system (other than Unesco) participating in the Inter-secretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO).

The Subsidiary Bodies of the Commission consist of a regional Sub-Commission, Programme Groups, Working Committees, Groups of Experts and other ad hoc bodies. Certain of these are jointly sponsored with other global and regional inter-governmental bodies.

At 15 November 1982, there were 110 Member States of the Commission, as listed in Annex IV to this Report.